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An Address

ON

SOME OF THE PRINCIPLES AND PROBLEMS RELATED TO THE TREATMENT OF GUNSHOT FRACTURES.

DELIVERED AT THE QUEEN ALEXANDRA MILITARY HOSPITAL, GROSVENOR ROAD, LONDON, ON MAY 26TH, 1916.

BY

HEY GROVES, M.S., F.R.C.S.,

SURGEON TO THE BRISTOL GENERAL HOSPITAL (LATE MAJOR R.A.M.C., IN CHARGE OF A SURGICAL DIVISION); HUNTERIAN PROFESSOR 1914.

INTRODUCTION.

AFTER nearly two years of military surgery, during the whole of which time I have been especially interested in gunshot fractures, the feelings which are uppermost in my mind are those of interest and hope in regard to a difficult problem, rather than complacent satisfaction about a fully accomplished task.

For many years the vexed questions of fracture treatment have absorbed my attention, and in order to satisfy myself about fundamental principles I had for some time been carrying on experimental work concurrently with clinical practice.

Now for nearly a year I have been placed in the fortunate position of having the control of hundreds of fracture cases in a large general hospital, and by the courtesy of the authorities and of my colleagues I have been able to see much of the work done at other large hospitals in the East. During the greater part of this time I was entrusted with the founding and administration of a central splint factory which brought me into very close touch with a great number of medical officers, and the various conditions under which military surgical work has to be undertaken.

In many ways our conditions of work were ideal for progress in knowledge; we had many men and many minds constantly in intercourse with one another, and we had a large workshop or factory on the premises of the hospital, freely open to all military medical officers, so that the treatment of cases and the manufacture of apparatus went on side by side, the latter being conditioned by the former.

I venture to think that this simple, efficacious, and economical plan might well be adopted in this country, so that in every city where there are military hospitals there should be one or more workshops where all fracture apparatus can be made according to the requirements of the staff, so that every encouragement should be given in the way of the trying of new ideas.

Because, after all, the treatment of severe gunshot wounds under modern conditions is a new problem, and it must be met by new devices. Not that gunshot fractures are a new thing, but since the last great European war we have attained fresh ideals of aseptic surgery, and we have a fresh standard set us by *x*-ray photography. We realize at once that limbs can be saved which in 1870 would have been amputated; and as we can see shattered bones at every stage in the progress of the case, we cannot allow gross malunion to occur without an attempt not only to save the limb, but to preserve its form and function.

It would be unjust to suggest that the attitude of the authorities is opposed to research and advancement in the Army Medical Corps. The generous provision of pathological laboratories gives ample evidence that they wish to advance knowledge even in its more theoretical and less utilitarian aspects. But it is not sufficiently realized how in matters of everyday surgical practice—for example, the treatment of fractures—there is scope also for research and advance.

These introductory remarks are offered as explanation or apology (if apology is needed) for introducing to you so many new types of splints and other fracture appliances. Every pattern has been worked out according to the demands of experience, but I am fully conscious of the fact that finality has not yet been reached, and that in every direction improvements are possible both in construction and still more in application.

I do not propose to weary you with any detailed description of these various splints, as this has recently appeared elsewhere,[1] and as I would prefer to demonstrate the apparatus individually to any who are specially interested. But I would propose to discuss certain fundamental principles which seem to me to underlie the whole subject, and to devote special attention to what we may regard as problems not yet wholly solved.

THE PROBLEMS OF WOUND TREATMENT.

It has been well said that every severe case of gunshot fracture presents two stages: in the first there is a wound complicated by a fracture, and in the second there is a fracture complicated by a wound. Whilst it is of cardinal importance to observe that at no stage can either wound or fracture be neglected, it is nevertheless true that the infected wound does claim first attention, and that until it has been restored to a healthy and healing condition it is useless to complete the restitution of the bone form. From the earliest possible moment and until bone union is firm the limb must be immobilized and placed in such a position that the wound can be frequently dressed without moving it, or at any rate without changing the relative position of the bone fragments. The object of this, in the first place, is to prevent pain and further injury to the soft parts by the ragged fragments of bone. When bone healing takes place the immobilization is necessary to secure proper form and union.

Having secured, then, immobilization of the limb, we have to consider very briefly the main points to be observed in the treatment of the wound.

In the early period—that is, within forty-eight hours of the injury—the ideal to be followed would be that every wound, except the clean through-and-through bullet wound, should be disinfected by excision and the removal of foreign bodies. At a period of a week or ten days after the injury disinfection of wounds seems hopeless, and a selective method must be adopted, leaving those alone in which infection is quiescent and opening up those only in which it is active. It is easy to state this principle, but it is a matter of some difficulty to carry it out correctly. There is no doubt that a ragged shell wound with a retained missile must be opened up early and freely, and equally that clean perforating wounds should be left alone; but there is a large class intermediate between these which gives trouble and anxiety. There has been a bullet wound, the missile is retained and lies some distance from its point of entry. To open up the whole wound track would involve a very large incision and the exposure of fragments of bone to fresh infection.

A great many such cases do very well without any incision, but sometimes disaster may attend upon temporization. I give two examples of the latter:

One was a man with a small bullet wound in front of the thigh, four inches above the knee, a comminuted fracture of the femur, and retention of the bullet which lay behind the fracture in the middle of the thigh. For a fortnight he seemed to be doing well, except for an irregular temperature. Then a swelling occurred in the thigh, and this on incision proved to be a large very foul abscess, caused by the *Staphylococcus aureus*. Subsequently he had a secondary haemorrhage, and died of septicaemia in spite of amputation.

The other had had a shell wound through the middle of the thigh, and the fragment of shell had been already removed, but the wound of entry was ragged and unhealthy. A drainage tube was inserted into the latter, but in spite of this the whole thigh became infected, and had to be opened posteriorly by incision, which extended from the knee to the buttock. I am glad to say that he eventually made a good recovery, but it would clearly have been much better to have opened up the unhealthy wound at first.

The only safe rule to pursue would seem to be to open up all cases in which there is any doubt. An irregular temperature, local tenderness, a rising leucocyte count, and an infection by the streptococcus, *B. pyocyaneus*, coliform or gas-producing bacteria, are all facts which require immediate operation.

As to the method of operation, it can only be said that nothing is really satisfactory except laying open the whole track of the wound down to the bone, and doing so in such a manner as to leave it widely gaping, so as to be independent of tubes or wicks for drainage. In the thigh the ideal situation for drainage is between the vastus externus

and the biceps, and by a partial transverse incision of both these muscles a wound is formed which by its position and its tendency to be kept open by muscular contraction is self-draining. As to the manner of dressing, it seems to me that loose gauze packing, with the addition, it may be, of salt bags or tablets, is best, and of tubes for irrigation where these may be necessary. As far as possible, deep pockets should be opened up so as to form shallow saucers, but this is not always possible, especially on the inner side of the thigh or in any situation where lie the great vessels or nerves. If a deep pocket has to be left, very special care must be taken in drainage. If a tube only is left, then a troublesome sinus results, whereas gauze packing to keep the cavity open is painful and difficult. A great help in this case may be found in the use of a special plugging instrument which I believe was invented many years ago for packing the uterus. It consists of a metal tube and a stylet terminating in a Y-shaped fork, and can easily be improvised. The tube is inserted at the bottom of the cavity to be packed and the ribbon gauze is pushed in by the stylet, the shape of the point always advancing the gauze as it is moved up and down in the tube.

I express no opinion about the relative advantages of various antiseptic or lymphagogic medicaments because most of my experience has been in the treatment of cases ten days after injury, at which time disinfectant treatment is almost hopeless. At this stage it seems to me that mechanical drainage and lavage must be the all-important elements of treatment by which the tissues can disinfect themselves.

The Question of Amputation.

The natural inclination of every modern surgeon at the beginning of the present campaign must have been to save every wounded limb, and never to amputate until forced to do so by the threat of death either of the wounded patient or his wounded member. But, laudable as is this inclination, it may be carried too far, and I would direct this criticism against the practice of the only surgeon with whose methods I am really intimate—namely, myself. On looking back over the surgical experience of the last two years nothing gives me more regret than the thought of how, in attempting to save shattered limbs, lives have been lost which might have been saved by timely amputation.

I believe that this regret will not be vain, because, in looking over my notes, it is not difficult to put forward certain rules for future guidance which will make mistakes fewer in the future. First, then, as to the facts. I exclude cases which have been so desperate in the extent of the wound and the degree of infection that death would probably have taken place in any case, whether amputation had been done or not. Of the remainder, when death resulted from gunshot fractures, which might have been prevented by timely amputation, all my cases fall under two anatomical and four pathological categories. Anatomically they have been injuries of the femur and the humerus; pathologically they have been (1) concurrent infection of the knee-joint; (2) secondary haemorrhage; (3) severely infected wounds of the thigh which could not be fully laid open; (4) loss of a large part of the femur associated with severe infection.

The fallacy which leads to disaster in all these cases in my experience has been the idea that it was safe to delay in the hope of saving the limb, reserving the idea of amputation, then death occurs before this can be done, or soon afterwards. Apparently this factor—that is, the danger of delay—is far greater in the case of septic fractures above the elbow and knee than those below; at any rate, I cannot recall any case of the latter in which amputation was postponed too late to save life.

It is not necessary to say anything further about the first two categories in the above list, but some qualifying remarks are called for about the others.

Sometimes a case is seen with a very septic lacerated wound going right through the thigh, so that the marvel is that the great vessels have not been severed. It may be impossible to open up such a wound without almost cutting the leg off.

For example, such a case came under my care in August, 1915. The wound was foul and sloughing, and passed from before backwards through the thigh at the junction of the middle and lower thirds. The femur was much comminuted. The patient was very ill, suffering from septic absorption and dysentery. Under an anaesthetic the wound was cleaned as much as possible, and as one could pass four fingers right through the thigh, drainage was very free. Continuous irrigation was carried out, but he died four days later.

In such a case the wound could only have been laid open by cutting right through all the muscles on the inner aspect of the thigh, which would have left the limb attached only by the soft tissues on the outer side of the leg. Such a procedure would really have been the first stage of an amputation, and if rapid improvement had not followed, then the complete removal could have been effected after a few days.

I think that this should be our rule in such desperate cases, to open up the wound at all costs by a transverse incision, and to amputate later if necessary. This gets over the difficulty and danger of a high amputation performed in a condition of sepsis and collapse. By doing it in two stages, as it were, both the shock and the sepsis are diminished, and there is a faint hope that when the first stage has been done and all the infected tissue excised, recovery may occur. The last category which I have mentioned is that in which a great part of the femur has been lost, either by the original gunshot or by subsequent operations. We have to consider various circumstances before deciding whether to retain the limb or not. If four, six, or more inches of the bone are lost; if the ends of the retained bone are septic, or devitalized—that is, appear to be bare in the wound—and if there are manifest signs of septic absorption, then surely it is better to remove the limb without delay, otherwise the future of such a case promises nothing better than a leg six inches shorter than its fellow, with a flail-like thigh, unless bone-grafting can be done. On the other hand, if any considerable loss of bone has been accompanied by rapid healing of the wounds, and the patient has retained his general health and vigour, it is always worth waiting for a future bone graft.

The Treatment of Foreign Bodies.

On this subject I would only point out two types of mistake which are often made. They represent the opposite extremes of practice. The commonest is the quite unnecessary seeking for inoffensive bullets, simply because these may be shown by an *x*-ray plate. In relation to a fracture, it is far better not to perform any operation which necessitates extensive opening up of the tissues simply to remove a bullet unless there is clear evidence that the latter is keeping up septic infection. In other words, the removal of a bullet should only be undertaken as a part of the cleaning of an infected wound, and not merely on account of the presence of a foreign body.

The other mistake is of a much more serious kind. It is the postponement of the removal of shell fragments until these can be located by the *x* rays. If I had not seen so many instances of this, it might be regarded as unlikely of occurrence. A man has a small, obviously infected wound caused by a shell fragment, with no exit. He is sent from the clearing station to ship, and thence to a general hospital for localization of the foreign body. By the time that this is done the most acute, and often fatal, sepsis has been set up. In such cases it is usually only necessary to enlarge the entry wound and insert the finger in order to find the shell fragment, with its fatal accompaniment of septic cloth taken in on its transit.

I have before me a piece of shell an inch and a half square and a third of an inch thick which I removed from a man's buttock seven days after his wound. He died from infection by a colon bacillus. I have seen a man who had travelled for six days with the time fuse of a shell in his shoulder-joint; he died of tetanus a few days after its removal.

The *x* rays should be our servant and not our master in the treatment of gunshot wounds. Septic shell wounds ought to be opened up without a moment's delay, and if metal fragments are present as an important element in causing the sepsis, they are easily traced.

On the other hand, because the *x* ray shows us a bullet, we ought not to open up the tissues of a fractured limb unless for the primary draining of a septic wound.

The Treatment of the Bone Fragments.

When in the early stages of the case the wound is opened up in order to provide drainage, or to remove

infected foreign bodies, there are encountered the shattered fragments of the bone, both main pieces of the shaft and many separate pieces. These ought to be treated with the greatest care, and never removed unless there is clear evidence of loss of vitality. Every bone fragment is a potential source of new bone growth. It has been proved both experimentally and clinically that comminuted fractures unite more quickly and more firmly than those in which there are only two fragments. But, on the other hand, a bone fragment is only a source of new bone when it is possessed of a vascular supply. If, therefore, a fragment of bone lies quite loose from all soft parts in a septic wound it is better to remove it. But generally it cannot be demonstrated that a splinter of bone is quite separated from its bed, and then it certainly ought to be left.

These remarks apply only to fragments of the shaft of the long bones. In the case of the articular ends of the bones the matter is quite different. In the shaft our ultimate aim is to restore strength, but near the joints the aim should be mobility, and if the joint is affected the bone fragments must be freely removed. Especially is this the case in the shoulder, elbow, wrist, and ankle. In the knee the problem is more complicated because both strength and mobility are necessary, and it is outside the scope of the present article to discuss this most difficult subject.

But to return to the question of a shattered shaft. If it is important to preserve the small fragments in their vascular bed, much more is it essential to take care of the main pieces of the shaft. Very often a free exposure of the fracture is made, one or other ends will appear to be bare—that is, denuded of its periosteum and soft tissues. But on this account such bare bone should not be cut off as if it was dead. It has its own vascular supply, which can be demonstrated by boring a hole into the bare bone, and noting how quickly this will bleed.

This leads to a most important point. In the early stages of treatment I would strongly urge that the less that is done to the broken shaft of the bone and its fragments the better. But later on, when the wound has been freely opened and is granulating healthily, pieces of bare bone may be seen in its depths. This is very frequent in wounds of the tibia, because of the superficial position of the bone. But it also occurs with any long bone if the overlying wound has been opened sufficiently freely. In such conditions, directly infection is over the repair may be greatly hastened by a simple procedure, which I have often carried out both for the femur and the tibia without an anaesthetic. The bare piece of bone is drilled by a $\frac{1}{8}$-inch twist drill in a multiplying brace. Each hole is continued until it begins to bleed. Then within a day or two it will be noticed that each such drill hole is the seat of a small button of granulation, and before very long the whole bare area of bone will be replaced by bone granulation tissue or pro-callus.

The Relation between Treatment of the Wound and Treatment of the Fracture.

When I began my work with gunshot fractures I was greatly impressed with the idea that the treatment of the wound and that of the fracture ought always to go on side by side and at the same time, but I am now inclined to modify this to some extent—in the case, that is to say, of fractures associated with very extensive and severely infected wounds. In these cases my present feeling is that the only treatment required for the fracture is that of immobilization with just sufficient extension to secure this until the wound has become healthy. If angulation of the fractured bone occurs in such a way as to bring the fragments close to the surface of the wound, this ought to be maintained or even increased. It greatly shortens the cleaning of the wound and facilitates the drilling of any bare bone that may be present. When nothing but granulation tissue can be seen in the wound, then, and not till then, will the process of bone repair have reached a stage when the relations of the fragments to one another is of any moment.

Two other facts favour this suggestion, and one militates against it. These will now be considered.

First, there is advantage in delaying full extension of the limb during the existence of infection and inflammation in the soft tissues. This is because extension involves tension, and the less tension there is in the tissues, the easier the drainage and the better the natural resistance of the soft parts against inflammation.

Then, again, it must be admitted that full and adequate extension can only be applied to a limb for a limited time—possibly six or eight weeks. Now, it is quite clear that if we have only a period of eight weeks during which full and adequate extension can be kept up, this ought to be applied at that period when union of the bone is taking place.

In some cases the cleaning up of the wound occupies several weeks, and extension during this time is almost wasted, and then has to be relaxed long before the bone union is firm.

Against this policy of delaying full extension it may be urged that in the period of delay there must occur great contraction of the muscles and fibrous tissue, which will make it much more difficult to restore the position of the bones than if this restoration had been undertaken in the first place. This is a very weighty argument, and it can only be set aside by two considerations: First, that it is not proposed to delay full extension after cleaning of the deep wound has taken place, and during the period of acute inflammation very little fibrous tissue will be laid down; and the second is that by means of steady weight traction applied generally by means of a transfixion pin we have so efficient a means of extension that there need be no fear that it will be inadequate even if delayed, provided, of course, that it is not delayed after bone union has begun.

The Problem of Secondary Displacement.

If a broken bone is allowed to unite with a certain amount of angulation and overlapping or lateral displacement, this union will be by a bridge of callus, and for a very long period after its formation this callus is very feebly ossified, as can be demonstrated by the very unsubstantial shadow produced by the *x* rays. At any time during this period, the bone so united, if subjected to much muscular traction or to the body weight, will bend, and the original displacement will become much more pronounced.

This secondary displacement is common only in the case of the femur, because it is in the thigh only that the forces necessary for its production are present. But in this bone the possibility of secondary displacement is a matter of very great importance, which is not sufficiently recognized. Its importance lies in the fact that any restitution of form in a broken femur which is short of perfect at the time will become a source of serious deformity later on. One often hears and reads of cases of fractured femur so put up that there is less than 1 in. shortening. In the great majority of such, this shortening is not due to an actual loss of bone, but to the fact that the overlapping of the fragments has never been wholly reduced. One can predict with some certainty in such cases that this initial error will later on be greatly increased by further overlapping and by angulation. In other words, if we are content with any method which begins by allowing an inch shortening, we must be prepared to find that the final result is gross malunion, with several inches of error. This applies specially to septic fractures, for although I am aware that ultimately sepsis which has been overcome will produce an excess of callus, yet unfortunately in its early stages this callus is weak and readily yields to displacing forces.

The practical deduction from this consideration of secondary displacement of the fractured femur is that when we undertake its primary reduction we must do so as fully and accurately as possible, knowing that the final result is always likely to be less perfect than the initial.

The Principle of Axial Extension.

It is so generally admitted by all authorities that extension in the long axis of the limb is the fundamental principle in the treatment of septic gunshot fractures that it is not necessary to consider the arguments for this practice. Apart from operative fixation, indeed, it is the only principle which has been seriously advocated for the reduction of fractures which show initial displacement. The only diversity of opinion is as to the method by which extension should be applied and maintained.

In order to put the matter as simply as possible, and to avoid obscuring the issue by details, it may be stated that

there are two main views. According to the one which dominated practice long ago, before *x* rays were known, it was only necessary to pull the limb down to its full length and hold it there by a splint or retentive apparatus until union was complete. According to the other, which, although practised before radiography was invented, nevertheless owes its present position chiefly to the demonstration of its results by the *x* rays, reduction ought to be by the constant but gradual action of a weight or spring acting on the axis of the limb, and this extension force should continue its action until union is firm.

The first method is that of manual extension, followed by a retentive apparatus, and the second is that of constant extension, the joints of the limbs being left free for movements. In order to narrow down the present discussion, it is only necessary to consider the Thomas's knee splint as an example of the first, and the weight extension of the leg, slung in a cradle, of the second in the treatment of a fracture of the femur.

Thomas's Knee Splint.

The limb is passed through the padded metal ring, which takes its purchase upon the tuber ischii. The leg, to which adhesive plaster is attached, is pulled upon and the extension bands are tied to the bottom of the splint.

By this means, which can often be applied without an anaesthetic, it is claimed that the displaced femur is put into correct position and kept there until union takes place. This, indeed, is nothing more nor less than the claim of the surgeon of the old days, before radiography, that he could by a single manipulation "set the fracture" and by a simple apparatus keep it there until union has occurred.

If I doubt whether, when used for a gunshot fracture of the femur in an adult, the Thomas's splint makes good this claim, it is on three grounds. The first will only appeal to those who have been accustomed to operative treatment of fractures. But I would ask such to recall the common experience of even a recent simple fracture of the femur exposed under full surgical anaesthesia. Is it the case that by a single act of traction from the foot the bone readily falls into good position? Quite the reverse. It is usually a most difficult and strenuous task to replace the bone in full length and alignment even when guided by the hand and eye. Is it likely, then, that the same manipulation can effect this result so easily when the bone lies buried and inaccessible in the soft parts?

My second reason for doubt is that, though I have recently seen a fair number of cases treated by this splint, I have never yet seen one in which gross displacement had been corrected by it. On the other hand, in the great majority this displacement was unreduced.

My third reason is that those who commend its use either do not give any statement as to the length of bone attained by it, or else make use of such expressions as: "In the presence of free suppuration, half to one inch shortening may be regarded as the average."[2]

A further reason for thinking that satisfactory restitution of form does not always result from the use of the splint is to be found in the fact that so many have added to it some device by which a more efficient extension may be obtained. For example, Wallace and Mayberry have added a screw winch at the lower end by which the limb can be further extended. And Major Hull depicts in his book on *Military Surgery* (Fig. 9, p. 65) an arrangement by which an elastic band ties the lower end of the splint to a pole fixed below the bed, so that the fixed extension of the original splint may be supplemented by a constant elastic traction. (This is, of course, to adopt the principle of a Hodgen's splint.)

If there is reason to doubt whether the original traction on the leg accurately "sets" the broken femur, still more is it open to question whether such a correct position can be maintained for the six, eight, or twelve weeks occupied in firm union of the bone. It only needs a little slipping of the adhesive plaster, a little stretching of the adhesive bands, a little giving on the part of the soft tissues over the tuber ischii, to allow the powerful thigh muscles still further to drag the bone fragments out of position.

And when used for a gunshot fracture with a large wound, the leg has to be raised every day for purpose of dressing, and this movement alters the relative position of the femur to the tuber ischii, and therefore modifies the extension every time. That a hard ring round the thigh is an uncomfortable device for a tender and inflamed leg would seem obvious, and it is very difficult to keep it from becoming soiled either by faeces or by wound discharges. If it is once soiled it cannot be replaced without taking off the splint, and this, too, must gravely imperil the position of the fractured bone. In this connexion, too, it may be noted that in spite of general assertions to the contrary, the discomfort of the thigh-ring is acknowledged by the advocates of the Thomas's splint, for in the same illustration to which I have just referred in Major Hull's book occurs the significant statement: "This elastic traction also elieves the patient of the pressure of the ring on his groin."

Continuous Extension.

It has always been recognized that it is the pull of the muscles which is mainly responsible for the element of displacement of a fracture which is most difficult to reduce. That this muscular tension is constant and elastic in its action, and not merely reflex or voluntary, is proved beyond all doubt by the difficulty in overcoming it when the patient is under full anaesthesia and the bones exposed in the course of an operation. Now, how is it possible to overcome this elastic tension of the muscles except by a constant traction in the axis of the bones?

If a constant weight extension (of 15 to 20 lb.) be efficiently applied to a recent fractured femur, so as to really pull upon the lower fragment, it will be found that within forty-eight hours the resistance of the muscles has been overcome and the bone has been restored to its full length or a little over. This is not a matter about which any doubt can exist after it has been put to a practical test. On a recent occasion I was able to demonstrate it to a number of medical officers. I showed them every case of fractured femur then in the hospital, numbering 36, and in every single case the bone presented the full length or from half to three-quarters of an inch increase. I do not suggest that this means that every case made a perfect recovery—as a matter of fact, some died and some had to submit to amputation—but nevertheless it served as a convincing demonstration that the system of continuous weight extension really and infallibly produced full reduction of the displaced bone; and, further, it can also be demonstrated that the reduction thus effected can be comfortably and fully maintained for three months.

The details of this method I need not go into, as I have so recently described them elsewhere.[3] There is no difference in principle between the system which I am advocating and that of Hodgen, Bardenheuer, Codivilla, Steinman, and of the Balkan splint. It is merely a matter of practical detail. For example, the cleverest splint for a fractured femur ever invented is that of Hodgen, but inasmuch as it involves a system of accurate balancing and of unstable equilibrium, it is difficult in practice to carry out well, especially when there is a large wound which requires frequent dressing. The wire cradle splints which I have designed are perfectly simple, and being self-contained can be perfectly adapted for transport.

Now, what is said against this method of constant extension? It is alleged that when a weight is tied to the end of a leg every movement of the patient alters the tension, which becomes in this way not constant but intermittent. But this is certainly not the case if the limb is properly slung and the weight made to act by a cord which runs properly over a pulley. However the patient moves the weight moves too, so that if he pulls himself up the weight is pulled up, always keeping just so much tension on the muscles, neither more nor less. Counter-extension is made not only by the body weight, but by a broad padded flannel bandage round the sound thigh, tied to the head of the bed. This has the advantage not only of preventing the patient being pulled down the bed, but also of keeping the pelvis tilted up on the sound side, so as to secure abduction of the fractured femur—a matter of cardinal importance when the fracture is in the upper part of the bone.

The whole point of difference between the two systems of manual reduction with a fixation apparatus and constant extension lies in the possibility of overcoming muscle tension by a constant pull and the impossibility of doing this adequately by a single momentary act, and what applies to the initial reduction of the fracture applies with tenfold force to the maintenance during the long period of four to twelve weeks occupied by the consolidation of

the bone. It has also been said that the constant extension involves constant pain. This is not the case. If the full weight be properly applied under an anaesthetic, then it is usual for one dose of morphine to be given to the patient, and after twenty-four hours he is perfectly comfortable, apart from symptoms associated with his wound.

Other points of importance in the weight extension system are, first, that the limb is from the very outset kept with all the joints semiflexed, and this in itself is of great advantage because being the position of physiological rest it secures that no group of muscles is placed at maximum tension. And, second, all the joints, hip, knee, and ankle, being left free from bandage or strapping can be kept exercised throughout the treatment so that when the femur has united the joints of the limb are supple, and the muscles well nourished.

Transfixion.

It will be noted that in the above discussion I do not refer to transfixion as a cardinal element in the extension method advocated. In my opinion it is not essential in the early stages of fracture treatment, though it is more reliable than any other method in certain situations. These are in the majority of fractures of the femur and in a few of the fractures of the lower leg bones. That extension by adhesive plaster alone is capable of reducing and retaining every kind of fracture has been long ago demonstrated by Bardenheuer and his pupils; but the method to be always successful needs considerable skill and experience; it often involves the use of very heavy weights, which cause considerable pain, and the main axial tension often needs supplementing by various lateral pulls, which complicate the method.

These drawbacks chiefly affect the problem of the fractured femur, and therefore for the moment I will confine my remarks to that bone. If, instead of indirectly pulling on the bone by plaster attached to the skin, direct traction is made on a pin driven through the distal fragment, all the above objections are overcome. That is to say, a comparatively small weight (12 to 15 lb.) will suffice to correct displacement fully, and there is seldom any need of subsidiary lateral traction. The method is shown by experience not only to be much more precise in its results, but it is less painful to the patient and it is likely to cause less soreness of the skin. Further, it allows greater freedom for massage of the limb and exercise of the joints. If it is carefully performed and not applied until active infection is over, it involves so little risk of further sepsis as to make its use free from objection. But in many cases it is much better to use both the adhesive plaster and the transfixion alternately rather than be content with one method only. The reason for this is, that it often happens that a long period is required before the bone union is firm. Thus, when severe initial infection occurs, it is better, for reasons above given, to begin with light plaster extension, just enough to secure fixation and alignment of the bone without attempting fully to correct the shortening. Then, when the wound is quite clean, transfixion is applied and the bone held by it for six weeks at full length, beginning by slight over-extension and then allowing the bone to drop back into accurate apposition. This is done by using 15 lb. for ten days and 10 lb. for the rest of the time (provided the limb is in a position of semiflexed joints). After the transfixion has been removed, the union may still be weak and the plaster extension can be reapplied for a further period.

One of the most important variations in the application of transfixion which ought to be made under certain circumstances is the placing of the pin not in the distal fragment of the broken bone but in the bone beyond the next joint. That is to say, in the head of the tibia for fractures low down in the femur or in the os calcis for those near the ankle joint. I have used this method much more frequently lately, and have been very pleased with its results. Whenever either the line of fracture, a haematoma, or a wound lies within a handbreadth of the lower end of the bone, it is much better to transfix below the joint. The objection that this site of transfixion will tend to immobilize the joint and to stretch the ligaments is more than counterbalanced by the freedom from septic infection of the pin-track, and the fact that by pulling apart the joint surfaces, stiffness in the articulation is avoided. Transfixion of the tibia at the level of the tubercle perforates nothing except skin, connective tissue, and bone, and there is therefore much less tendency to the formation of a septic sore in the soft parts than when a muscular region is perforated. Thus, if six weeks should be regarded as the maximum time for a pin to be left in the condyles of the femur it may remain for eight weeks in the tibia.

It is not necessary actually to transfix the bone in order to get mechanical fixation to it. The same result may be obtained by the use of a horseshoe screw clamp in which a screw is driven into the bone ¼-inch on either side.[4] I do not use this as a routine because it is a little more complicated and expensive, and because I do not regard the perforation of the bone itself as involving any risk. But it is very useful in one type of case, namely, in a T-shaped fracture into the joint either in the knee or elbow, with fracture of the femur or humerus. In such an injury the clamp presses together the separated condyles, and at the same time affords a fixed point on which traction can be made.

As regards the use of the double transfixion apparatus which I have described elsewhere, I think that its usefulness is very limited in gunshot fractures. If the simple distal transfixion or the screw clamp be first applied and traction adequately made whilst the limb is properly slung in a semiflexed position, it will be found that there is seldom any call for anything further. The chief value of the appliance is in order fully to correct overlapping of the fragments as the first stage of operative fixation.

Open Operations for the Fixation of Gunshot Fractures.

I see no reason to retract anything which I have already published as to the dangers of operations performed upon gunshot fractures in their early acute stage of infection. Any open operation must mean large incisions and multiple drillings of the bone. That they have been followed by wide necrosis requiring amputation has been demonstrated. And thus far no one has brought forward any consecutive series of cases proving the contrary.

If infection is absent, or when it has been cured, the matter stands just where it did for the closed fractures of civil life. But I am bound to say that the experience of the last two years has very strongly convinced me that a careful study and practice of accurately applied extension methods leaves very little scope for open operations.

Unfortunately in the present war there will always remain one large class of case which will require open operations—namely, ununited and malunited fractures of old standing. This is such an important subject that I cannot treat it adequately in this place, but I should like to put one or two observations before you.

The first relates to the restoration of form and length as the first stage of every operation. In an old malunited fracture this may be a matter of immense difficulty, but it can be overcome by appropriate means. These consist in first breaking down the malunion, by an open operation if necessary, and then by applying transfixion and extension, using 25 lb. in the case of a femur, and keeping the limb slung up in a wire cradle. All that I have said above about the immense superiority of a gradual constant traction over a violent momentary one applies here with tenfold force. A malunited femur of three months' standing will require perhaps 200 lb. to restore it by a sudden act to full length, even after the callus has been cut through. This is due to the dense mass of fibrous tissue and the contraction of muscles and fascia. It involves great risk of rupture of the soft tissues and even of the great vessels. But the same thing can be done by 25 lb. by the steady pull of a weight acting on a transfixion pin for one week. Then when the skiagram shows that the overlapping is reduced, an open operation can be performed without undue labour or anxiety.

It will often facilitate this operation if, as its first act, the double transfixion apparatus is applied by placing a pin through the proximal fragment. In this way good hold is secured of both fragments, and by suitable rotation or the extension of one or other lateral screws, the fragments can be accurately moved into any position desired.

The next point is also of great importance. It relates to the necessity of refreshing the bone ends. It is not at all satisfactory merely to cut off the sclerosed terminations.

If only a thin shell of bone is removed, the tissue left behind is often dense and avascular. If a free excision of bone be done this involves shortening the limb. But as Wildey[5] has shown, a much better way is to drill a number of holes into each bone end, or I would suggest parallel saw cuts, in the long axis of the bone, penetrating for half or three-quarters of an inch until freely bleeding vascular tissue is reached. By this means the active osteogenetic layers of the bone are opened up and rapid formation of fresh callus is secured. This restoration of the active osteogenesis of the bones may well be done at the first stage of the operation before transfixion and extension, and it will then be found in many cases that no further operation will be required.

My next point relates to the use of wire. Since plates have become the fashion wire has fallen into disrepute. Nevertheless, if it is used properly it is often a much better and more efficient means of suture than any other. Stout soft iron wire is, I think, the best material, and when it has been placed round the bones, or better still through them, it should be tightened by means of a special instrument which will prevent any slackness or kinking. The type of fracture in which wiring is much better than plating is the very oblique, that is, when the length of the fracture is three times the breadth of the bone.

My last word in regard to this subject relates to the use of plates. Whether used in a recent or an old case, the plate is nothing more nor less than an internal splint the design of which is to hold the bone in good position until natural repair has taken place. In an old fracture repair will be slow and the natural forces which make for displacement are especially strong. Therefore a long plate applied by a series of "wood-threaded screws" which hold only by a frictional grip is likely to become displaced before it has fulfilled its functions. The use of converging screws of "metal-threaded screws" tapped into the bone, or of opposite bolted plates will give a much more secure and enduring fixation.

If, however, only the ordinary plates and screws are at hand, it will greatly add to the prospects of success if the original transfixion pin be retained and a weight of 10 lb. be left for a further five weeks after operation, maintaining the bone in alignment and thus relieving the screws of the tension which otherwise will probably tear them out before union has taken place.

Bone Grafting.

The most interesting chapter in the repair of fractures is that which deals with their union by means of living bone grafts. This, too, is a subject on which I can merely touch in the briefest manner. It may be taken for granted that there is conclusive experimental and clinical evidence in favour of the use of autogenous grafts, and therefore it need not detain us to inquire as to the relative advantages of these over homogeneous or heterogeneous grafts, and much less about the rôle of dead or decalcified bone.

The theory of autogenous bone grafting is by no means settled, but that a freshly taken piece of bone will, when laid into a suitable bed, become united to it and form a living part of the skeleton is beyond all doubt, and the relative importance of osteo-conduction or osteogenesis is of no great practical consequence. But there are several points of practical technique which I am convinced are of paramount importance, but are not sufficiently recognized by surgeons.

First, as to the capacity of the graft. It has, I think, been proved that a graft can grow without any periosteal covering, but, on the other hand, if it has periosteum on one surface it will grow better and more surely. In other words, periosteum is not essential for vitality, but it will afford a ready means of interchange between the vessels of the graft and its bed. Another point which is quite certain is that a living piece of bone will not act as a centre of new bone growth if it is implanted anywhere in the tissues, and that if it lies loosely movable it will remain indolent and inactive.

Just as in plant grafting, so with bone—the graft must be firmly implanted in an active tissue of like structure and firmly held there, otherwise neither union or growth will occur.

The non-recognition of this fact has led to a long series of disappointing results in intra-medullary bone grafting for fractures. A piece of bone is taken, and loosely placed in the medullary cavity of two bone fragments of the fracture without firm adequate fixation. The result is a constant movement of the broken bone, and a failure of the transplant to take root. When we bear in mind the structure of bone, and how its active elements of osteogenesis are encased in minute canals, it is easy to understand that it is necessary for the graft to be brought into firm contact with its bed for new blood vessels to pass over from one structure to the other. We do not know whether there is any essential difference in the capacity of different bones—for example, the tibia, the fibula, or a rib—to act as a rapidly growing graft, but at present the tibial crest is all the fashion.

Secondly, as to the desirable characters of the bed. If a graft is to have the best chance of taking firmly and quickly it must be fixed to its bed over a wide area, and this area should be richly vascular. In the case of bridging a gap in a bone both these conditions are obtained by cutting a longitudinal slice or sector from each of the fragments to be united. Before fitting the graft on to the surface prepared for it the latter should be scored transversely by a fine saw, so as to provide furrows between the bed and its graft in which pro-callus can at once collect. But though the bony bed is the all-important one, the soft tissues should not be neglected. Scar tissue should be clipped away, and after the graft is fixed by its two ends the tissues round it should be snugly drawn together by catgut so as to avoid any dead spaces. If the periosteum has been preserved on the graft, it will adhere and become vascularized quickly from the soft tissue surrounding it, and this is its chief advantage.

Thirdly, as to suture or fixation of the graft. Recent workers in this subject, of whom the most eminent is Albee of New York, have discarded all metal fixation agents and use only animal ligatures. I venture to think that this may be carried too far; if followed rigidly it will greatly limit the possibilities of bone grafting in the restoration of bones from which a segment has been lost. In the humerus or the femur, for example, if we are to make good the gap, the bone graft, if only tied in place by kangaroo tendon or catgut, will be allowed a degree of mobility which will be very prejudicial to union.

On the other hand, if wire sutures, metal bolts, or even, though rarely, long plates, be used to fix the fracture and the graft, efficient immobility will be secured, and I have never found that these metal structures have given any trouble.

When Albee wants to use a small bone nail he makes it then and there from the patient's shin bone with a lathe. But this greatly complicates the matter and puts it out of the range of practical surgery. One might as well give up catgut and always make sutures or ligatures out of strands of the patient's own fascia. Ivory pegs hold firmly and are ultimately absorbed, and they will prove to be of great use in fixing a bone graft.

Conclusion.

In conclusion, if I have spoken to any purpose I have convinced you that the subject of the treatment of gunshot fractures is one in which there still remains many unsolved problems, and I would that I could say this in such a place and in such a manner as to secure further interest in the matter. In all truth it is important enough, for there are tens of thousands of our men, and before the war is over there will be hundreds of thousands, with broken bones.

References.

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THE medical department of the University of Pennsylvania, the Jefferson Medical College and the Medico-Chirurgical College of Philadelphia, have been amalgamated. By their union they form the largest school of medicine in the United States. The total enrolment for the three schools in 1914–15 was 1,126, and the total number of graduates in 1915 was 284.

A RECONSIDERATION OF THE PRINCIPLES AND METHODS OF HUGH OWEN THOMAS.

I. SOME REFLECTIONS ON THOMAS'S SPLINTS.

BY

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YEARS ago, when I was under the spell of the great development of abdominal surgery then taking place, my friend, Dr. Joshua Powell, of Newcastle Emlyn, under whom I served my apprenticeship, told me that orthopaedic surgery was undergoing revolution at the hands of Mr. Hugh Owen Thomas, M.R.C.S., of Liverpool, and that in the course of a week he had spent with Thomas he had seen the work of a wizard. I suspected at the time that my friend suffered from an overdose of hero-worship, but on my return in 1900 from the South African war I had occasion to visit Mr. Robert Jones (now Inspector of Military Orthopaedics) in Liverpool, and found that he was applying the methods advocated by Thomas which had so impressed my old master. I returned converted. During my initiation I was startled to see the tibia and fibula fractured without anaesthesia, in the final stage of treatment of very bad talipes in children in order that the toes might be turned outwards, the little ones leaving his rooms within half an hour, not only with their feet duly corrected and splinted, but smiling.

Bonesetters.

During the last eighteen months I have had many opportunities of discussing Thomas's works, and have been surprised to find that the impression is still handed down by some members of the profession that he was a "bonesetter." It was entertained even by one who had bought the second edition of his work on *Diseases of the Hip, Knee, and Ankle.*

Three factors probably have contributed to this extraordinary but false report: (1) He was not in the habit of putting his qualification after his name in the books published by him; (2) he held no hospital appointment; and (3) he had his splints made and fitted on the premises, so that surgical instrument makers, whose catalogues and other advertisements circulate largely, had not the opportunity of spreading among general practitioners and others the knowledge of the numerous valuable inventions made by Thomas in splints and other orthopaedic appliances.

I cannot help thinking that if a book were written on the ironies of fate, no better illustration would be discoverable than the fiction that Thomas was "a bonesetter," for Hugh Owen Thomas in his day made a special study of "bonesetting" and of "bonesetters," and published his opinions in terms which were candid and unequivocal. Two examples of his views upon the teachings by the giants of surgery in his time will suffice to illustrate the point. Thomas says: ". . . the foregoing quotation" (from the *Clinical Lectures and Essays* of Sir James Paget, vol. i, p. 93, article "Bonesetting, etc.") ". . . is utterly at variance with my own personal observation." When dealing with a further quotation from another book on "bonesetting" he states: "Certainly not; . . . most of the evidence contained in Mr. Wharton Hood's treatise is secondhand, derived from an unreliable source; consequently not deserving of the serious consideration of practical surgeons." I cannot help thinking that H. O. Thomas's opinion of "bonesetters" might very well be quoted in the next edition of the books about secret remedies published by the British Medical Association, for it is a matter of public interest, and its wider dissemination would be a public service. It is expressed in the following unequivocal terms:

A fallacy with the public, and a growing one among the profession, of late years, has been that some unqualified practitioners are in possession of an occult art in this branch. I have, after extended observation, ventured to declare this a fallacy; having been during the early portion of my life in the confidence, for years, of as many as seven of these manipulators, male and female, in various parts of England and Wales; and indirectly, watched the practice of six such others, distributed over England, Wales, and Scotland. In the sanctum of one I had the pleasure of meeting (incognito) one of our metropolitan professors of surgery in search of knowledge.

These opportunities have given me the right, and in the interests of the progress of rational surgery, I feel it my duty to record the experience thus gained, which experience amounts to this: that this class of practitioners are not in possession of methods, "not dreamt of in our philosophy." . . . Many of them are only successful competitors with shrines, relics, and other nervine remedies, and I certainly would not advocate the addition of even a genuine relic to the surgeon's armamentarium.

Thomas dreamt of the redemption by the profession of the public from the wiles and snares of bonesetters. Their claims and pretences were exposed by Socratic methods. Their veil of mystery he tore down after studying the practice of *thirteen* of them—unlucky number! Members of our profession unacquainted with the facts still dub Hugh Owen Thomas (M.R.C.S.) a bonesetter! Is it, then, a wonder that every big city and large town is visited weekly by *soi-disant* bone experts who set up to correct our hypothetical or real blunders?

Thomas Splints for Fractures.

The recognition by surgeons of the value of Thomas's splints in the treatment of fractures is a recent development. The mastery of the principles involved in the construction and the application to a limb of his splints was not, to my knowledge, attempted by teachers in the early Eighties, for they, like others, were carried away by the successful and audacious raids of surgeons into untrodden and hitherto forbidden regions. The fascination of the aggressive successes in abdominal surgery has had much to do with the general failure of surgeons to appreciate or indeed to know anything about Thomas's pioneer work in the less exciting but equally important field of bloodless surgery. The manner in which he conducted his work, and the patience he showed in waiting to ascertain the end-results of his experimental work before publishing it, are indications of the character of the man. The care which he gave to every detail is shown by the fact that he had a workshop built on to his house and taught his own workmen how to fulfil his exacting requirements. He had treated over a thousand cases before he printed his first book, and he published it without putting any medical qualifications after his name.

If some of us who, like myself, have suffered from a mechanical turn of mind had had the opportunity of seeing and studying Thomas's practice, or had been taught the right way to apply his splints, and if we had known the trouble he had taken to obtain satisfactory models of splints to carry out the principles underlying treatment, there would not have been so many uncalled-for raids into the open field of operative intervention to force foreign bodies made of iron, steel, ivory, silver, or bone, into bone. Neither would "improvements" and "modifications" of his splints have so readily been devised. Forty years ago he foresaw that surgeons with incomplete knowledge might fall into these errors, for in the preface to the second edition of his work, which appeared within six months of the first, the following warning is to be found:

"Since the first edition was published many suggestions have been made, some of which have diminished the utility of the machines employed; others I had already tried and set aside. . . . Some improvement, probably, will be made in the practical parts of my methods, and by strict adherence to the details I have indicated the innovator will probably avoid trying designs that have already been improved upon."

This warning seems to have fallen upon unappreciative ears, because two years later he gave a full-page plate showing no fewer than nine "incorrect models and appliances"!

But let not this attitude be misunderstood. His real anxiety was that those who adopted his practice in the treatment of fractures, whether accidental or made by the surgeon in the course of his treatment of deformities, should recognize the principles upon which it was founded—namely, "enforced, uninterrupted, and prolonged rest." "Some," he writes, "have admired the form of my splints, and have complimented me as though I were only an ingenious blacksmith," but "very few have understood the principles of the treatment." It must have been a source of intense gratification to this uncommon personality

to find that Rushton Parker, in discussing his methods as a practical novelty, concluded by stating that "At present they are the best methods ever devised, and I am not alone in this opinion." These words, written in 1878, were those of a prophet, but at that time Professor Rushton Parker's voice was that of one crying in the wilderness.

There is hardly a fracture or a deformity existing for which Thomas did not invent some simple appliance by which cure or improvement could be obtained, and I may be permitted to digress for a moment to quote his views upon a condition not wholly disconnected with fractures of the lower limb, which is often overlooked even at the present day. In this way will be shown also his keen appreciation of the perplexities of the psychological difficulties with which he had to contend when advising a sound, simple, but new device for cure during the initial stage of splay-foot. The story of a medical friend who consulted him about his son, both of whose feet were in the initial condition of splay, well illustrates the directness of his practice, the humour with which he viewed failure to accept his advice, and the quiet confidence he felt in the soundness of his device. "Money," he writes, "may be spent upon machinery, so-called spring-plates, rubber pads, and steels, but they cannot assist so effectively as a few pennyworths of leather used to vary the boot sole." After examination of the boy, Thomas advised the well known "crooked heel" to be worn. Meeting the boy some time afterwards in the street, he observed that he was "rigged with steels as if he was being scaffolded for general repair. The assistance was only a fraction of that which a sloped heel would have given."

Thomas was eminently successful in his pioneer work because he personally supervised the carrying out of every detail in the construction of his numerous appliances. He thought it was unwise for a surgeon "to trust to a surgical instrument maker to fit his patient; his training and opinions are too mechanical to qualify him to handle unsound parts. To efficiently apply the various knee and hip instruments . . . it is absolutely necessary that the surgeon employs a 'Vulcan' cutter and fitter, a mallet and a triple acting wrench. . . . Armed with these tools he can easily model . . . an unsuitable splint into an orthodox form, and obtain from it good assistance." In order to complete his armamentarium for every emergency the surgeon was also to take with him "a restorer" and a "boot heel plate." With these appliances, he said, the surgeon could, by himself, fit a splint that might be several inches too long or too short, to the patient and his bed in a shorter time than it would take a blacksmith to blow up his fire.

The deterioration of Thomas's knee-splint (more especially) is due to two circumstances. The first is that surgical instrument makers have not taken the trouble to master and copy accurately all the details in construction upon which he insisted, and the second is that surgeons who do not know how extension should be applied *à la* Thomas suggest to instrument makers innovations which are usually most eagerly carried out; the instrument makers then exploit a profession, untaught in Thomas's methods of dealing with fractures, with a modified splint rechristened and blessed with names of varying magnetism. On three occasions I have had the good fortune to find out in time that modifications I had approved were a degradation of the original.

The aluminium splinting introduced by Treves several years ago for temporary employment in military service is practically useless for the treatment of fractures of the lower extremity, and more especially of the femur with overlapping. It is not rigid enough to keep up the force of extension that is necessary, neither is it possible to get a suitable perineal ring for efficient counter-extension. I tried it many times before giving it up, but the tape measure told a tale which could not be disputed. I am one of those who believe that the great practical value derived from the use of the tape measure in determining the reduction or setting of a fracture, and particularly of the femur, has suffered very much on account of the introduction of *x* rays for diagnostic purposes; the tape is always available, *x* rays are not, and besides the tape is infinitely more reliable as a method of determining shortening of a limb than an ordinary *x*-ray photograph. Some twenty years ago I showed by experiment that an ordinary straight transverse fracture of a bone appeared in a skiagraph as V-shaped with a varying angle, except at one point, which was immediately underneath the anti-cathode. The distortions of fractures commonly shown in ordinary *x*-ray photographs are fairly well known, but to the medical practitioner who is untrained in skiagraphy these distortions as shown in ordinary skiagrams are most confusing. The only *x* ray photographs which convey a true impression of the conditions of a fractured bone are the stereoscopic. When stereoscopic skiagraphy becomes as popular as the cinema, when it is to be obtained in small villages, in the coal field of the Rhondda, or nestling in the wilds of Snowdonia, or near the snow lines of Kilimanjaro, then and then only will the time have come to attach to skiagraphy the same high value in diagnosis of shortening as belongs to the tape measure to-day.

A splint *per se* has no more power to effect the proper setting of a fracture than a pair of wings has to fly without motive power. Nevertheless, I have seen 1 to 3 inches of shortening in femurs where splints have been condemned for the shortening as if they were sentient beings.

The practitioner who says that he does not know the extent of shortening because an *x*-ray photograph has not yet been taken, has not been taught or has not realized the great teachings of our forefathers.

A recent writer on fractures has spoken of the setting of a broken bone as a myth. I am not quite sure what meaning he intends to convey, but if he means that the two fragments of a fractured bone cannot be brought into accurate alignment, and that shortening cannot be overcome in a large proportion—I would say the great majority—of all cases, then I maintain that he is mistaken, and that the surgeon who has grasped the principles and is not afraid to carry them out, can in all ordinary cases produce good alignment and a limb of normal length. These results can be obtained by the understanding of principles and the application in practice of methods which existed before the advent of *x* rays and the open method into the field of the treatment of fractures.

(To be continued.)

AN EXTENSION SPLINT FOR FRACTURES OF THE HUMERUS.

By DONALD HINGSTON, F.R.C.S.Ed.,
Captain C.A.M.C.

Fractures of the humerus, especially compound fractures, and more especially those caused by bullet or shell in which there is extensive laceration of skin and muscle, have proved difficult to treat during the present war, and this accounts for the unusually large number of new splints for this fracture recently described.

The splint I now submit was devised in September, 1915, and has been used with success on a number of cases—some with great splintering and extensive laceration.

It is a simple metallic extension hoop. I have used the aluminium splinting supplied in the field fracture box, and have found 21 inches by 9 inches a convenient size. It is applied in the following manner:

If the skin of the lower two inches of the arm is intact, and if the fracture is above that level, wide strips of adhesive are applied to the outer and inner surfaces of the lower part of the arm. These strips attach the arm below the fracture to the middle of the lower bar of the hoop (Fig. 1).

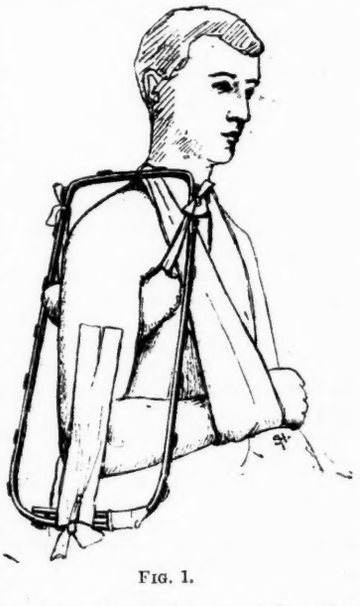

Fig. 1.

It is advisable to split the inner strip and thus avoid pressure on the pointed internal condyle. A piece of half-inch rubber tubing about 9 inches in length is wrapped around with absorbent cotton and made into a pad of comfortable size. This pad, well sprinkled with talc powder, is placed in the axilla, and tied to the upper corners of the splint by means of bandages passing through small holes through the rubber tubing near the ends. When tying gentle traction is made; the pull should not be too great; it varies according to the lesion and to the strength of the muscles. A feeling of comfort and marked relief are the guide as to when the correct amount is reached. This pull is maintained evenly distributed by the elasticity of the rubber tubing. The hand is then supported in a position of ease. It is usually necessary to tighten up the pull from time to time, the comfort of the patient being the index. Under this gentle traction, reduction of the fracture should take place slowly and painlessly. The muscles will act as splints, no other supports being necessary.

If the skin on the lower part of the arm is injured, and adhesive cannot be applied to it, or if the fracture is in the lower two inches of the humerus, extension is procured indirectly by applying the traction just below the elbow (Fig. 2). The forearm is flexed at right angles and the wrist firmly held up. The forearm should be protected by a pad that pressure may be evenly distributed. Any splinting can be used. A layer of absorbent cotton covered by a few layers of plaster-of-Paris bandage moulded to the forearm and bend of the elbow is most satisfactory.

FIG. 2.

This splint has many advantages. It is simple, easily applied, and with the exception of a little tightening of the pull from time to time it need not be altered for some days, and then the only necessary alteration is the changing of the absorbent cotton in the axilla.

Extensive lacerated wounds through the arm can be dressed without moving or taking off the splint. The patient can get up, and even travel without altering the splint or reducing the extension. Above all is the great comfort and relief it gives. This has been observed in all cases in which it was used.

In a very small number of cases there was swelling of the forearm, but this was temporary, and required no special treatment. It occurred in badly infected cases. No ill effects have occurred from pressure in the axilla. The points of support are the axillary folds and vessels, and nerves are in no way pressed upon. The traction is along the line of the bone, and the position of the fragments is necessarily correct.

THE Valentin Haüy Association, which has for many years occupied itself with the training of the blind in farm labour, including the care of animals, the making of butter, the binding of sheaves, the winnowing of grain, etc., is endeavouring to make men who have lost their eyesight in the war fit to return to their former work on the land. A missionary has been found in a man blind from infancy who is sent to teach the maimed soldiers. The results are already very encouraging. One man is reported to have quickly learnt to gather fruit and vegetables, to yoke and unyoke horses, to feed poultry, to milk cows, and to clean harness. Another can without help look after fifty hives of bees. Valentin Haüy, it may be mentioned, was the philanthropist who in 1785 founded in Paris the Institution Nationale des Jeunes Aveugles, said to be the first school for the blind.

D

A METHOD OF TREATMENT OF "SHELL SHOCK."

BY E. T. C. MILLIGAN, M.D., B.S.MELB.,
CAPTAIN R.A.M.C.

A WELL-KNOWN method of treatment of hysteria has been applied at this casualty clearing station to selected cases of what is now diagnosed as "shell shock." The results of this treatment have been so satisfactory that I desire to give some account of the details of the same in this brief note.

It is not the purpose of the note to classify the many different conditions caused by "shell shock," nor to suggest the pathological condition—psychical or physical—underlying them.

Nature of Cases Treated.

The cases treated were those who "could not speak," "could not hear," "could neither speak nor hear," cases of loss of memory, and cases obsessed by the memory picture of recent terrible experience, their minds being occupied, to the exclusion of all other things, by the bursting of shells in the trench or during the attack.

Other cases which have been treated are those of loss of function, partial or complete, in one or more limbs; of inability to walk, and of neuromimetic deformity of limbs.

We have endeavoured to select for treatment only cases of genuine hysteria and of conscious fraud. Malingerers with mimicry so close, and acting so consistent that it was difficult to discriminate them from genuine hysteria, respond more easily to the method, though in a different manner.

Cases Excluded from this Treatment.

Care has been taken to exclude all cases suffering from discoverable organic lesions of the special sense organs, the central and peripheral nervous system, and organic lesions of the above accentuated by hysteria. The underlying organic lesions in these cases must first be treated.

TREATMENT.

It is well known that during chloroform administration there is a stage before the involuntary struggling stage when a patient is highly susceptible to suggestion. It is while the patient is in this stage that suitable suggestion and stimulation should be used. The treatment must be conducted in a quiet room, apart from other patients. Chloroform is slowly administered, and suggestion carried out by the anaesthetist when the patient has reached the required stage.

In cases of loss of memory, and cases in which the memory of past experience is blotted out, and replaced by the mental picture of recent terrifying incidents, the past life of the soldier can often be recalled by suggesting to him some person or object of his affections, as his wife, his child, or his mother. Mention of his home life and country, his regiment and occupation, has proved effective in restoring the chain of past experience.

Mutism is treated by the insistent asking of suitable questions in the suggestible stage, and cutaneous stimulation is found of use.

Loss of hearing responds to the same methods.

Hysterical attitudes of limbs are changed to opposite attitudes and fixed there firmly with bandages; thus extension is changed to extreme flexion.

Loss of function in limbs is overcome by continuing to give passive movement together with suggestion as the patient is regaining full consciousness.

In obstinate cases complete anaesthesia is produced, and the patient is immediately allowed to recover from the anaesthetic. As he emerges he is again in an impressionable state, and this state has been used for suggestion with success where the first efforts of the operator were not successful.

In all types of cases suggestion should be continued till the patient has fully recovered consciousness. When quite rational the man is assured of his cure, promised a rest, given morphine, and allowed to enjoy a much-needed sleep.

The after-treatment consists in prolonged rest and change of surroundings, even although the most obvious symptom of the mischief—for it is a symptom only—has been remedied.

All cases should be treated at the earliest possible moment. Chloroform is better than other general anaesthetics for this purpose, because it produces definite stages of anaesthesia which can be readily prolonged as required. Cases which have been cured by abnormal experiences, such as an abdominal operation, or a shipwreck, would probably have been cured earlier by suggestion under chloroform.

GUNSHOT WOUND OF SPINAL CORD AND TRACHEA: RECOVERY.

BY

CAPTAIN G. W. THOMPSON, R.A.M.C.,

AND

CAPTAIN G. W. STANLEY, R.A.M.C.

A LIEUTENANT was brought on to the hospital ship *Dongola* at about noon on October 14th, 1915. He was hoisted on deck and conveyed with great care to the officers' ward. He was seen immediately, and found to be in almost a dying condition—blanched skin, pinched expression, and dilated pupils. Respirations were very shallow, and the diaphragm apparently did not move. He was most comfortable in the sitting position, with the chest and shoulders supported; the chin was bent on to the chest. The only history supplied was that he had been wounded in the back two hours before admission. Pituitary extract was given hypodermically, oxygen administered, and hot water bottles freely applied. When the dressings were removed from the neck a gunshot wound was seen in the middle line of the back over the lower cervical vertebrae. The wound was found to go down to the spinal cord, and several loose pieces of bone were removed, and a smooth elongated, partially movable, body detected. This was believed to be a bullet pressing on the spinal cord. "Barker's" solution was injected all round the wound, and what we believed to be the bullet was seized with forceps, and very gently raised; it was found to be attached to the spine. Within two minutes the breathing became deeper and gradually natural, colour slowly returned, and the pulse improved. In half an hour respiration was natural, the pulse fair, and colour good. During manipulation of the partially attached piece of vertebrae air escaped through the wound at each respiration, and as the breathing became stronger each respiration was accompanied by a whistling noise through the wound. The wound and skin were thoroughly cleaned and dressings applied; the trunk and neck were fixed as firmly as possible between pillows in the semi-erect position.

On October 16th we immobilized the neck and back with plaster-of-Paris and adapted aluminium splints, shaped over the head, shoulders, and back. The same day he was transferred to H.M.H.S. *Aquitania* for England. Major Jackson, R.A.M.C., P.M.O. of H.M.H.S. *Dongola*, saw the patient several times with us, and Colonel Mayo Robson, A.M.S., who kindly came on our ship and agreed that the risk in movement, with the neck well fixed, was very small.

There is no doubt that the vertebral column was fractured and a fragment of bone was pressing on the spinal cord, also that the trachea was perforated.

On November 8th we heard from the patient at the 2nd London General Hospital telling us he was convalescent and hoped soon to be about again.

Captain Thompson writes under date May, 1916: Since writing these notes I have met Colonel V. Warren Low, A.M.S., who was attached to H.M.H.S. *Aquitania* as consulting surgeon, and watched the progress of the case on the voyage to England. Colonel Low tells me the patient developed a high temperature with dullness of one lung behind, but these signs cleared up before he reached England.

THE Order of the Nile of the Third Class has been conferred upon Dr. Llewellyn Phillips, Honorary Physician to the Sultan of Egypt.

THE Children's Country Holidays Fund is continuing its work under some difficulties, but managed in 1915 to send away 15,955 children at an expenditure of rather less than as many pounds. Towards the amount the parents contributed over £4,000. The weekly payment for each child had to be raised from 5s. to 6s. The fund, which has its offices at 18, Buckingham Street, Strand, London, W.C., appeals for subscriptions.

EUSOL AND OTHER METHODS OF WOUND TREATMENT.

BY MAJOR C. W. DUGGAN, R.A.M.C.

FROM the appearance of wounds transferred to the Military Hospital, Lincoln, after treatment with eusol, it is evident that a clean, healthy, granulating surface is readily produced by this antiseptic, but having reached this stage one has to admit that the further progress of the wound is delayed by the presence of a watery solution in contact with the wound; and hence recourse is had to various astringents to promote healing.

The reason for this interrupted success is due to neglect of the principle of osmosis without which all treatment is doomed to failure; it has also led to the bewildering number of remedies and methods recently recommended, and to the statement that no single dressing will suit all wounds, or the different stages in the healing of a wound. I have already written on this subject to the effect that the whole question depends on the carrying out of the two principles, namely, antisepsis and osmosis, and keeping these in mind the whole process of wound treatment is a comparatively simple and straightforward one. To fulfil these conditions any dry non-irritating antiseptic may be used; personally I prefer ichthyol; I have used it for more than a year in septic gunshot wounds, and have invariably been satisfied with the results. Glycerine exerts an osmotic action which is superior to all others, and if I were only allowed one drug in the treatment of septic wounds, I would employ glycerine in preference to any other. It is quite unnecessary to vary this treatment at any stage. I have been in the habit of swabbing the wound with pure rectified spirit, but if the patient complains of the irritation I do not insist on continuing its application.

As sepsis and secondary haemorrhage do not occur with this treatment, I am convinced that septic limbs would be saved from amputation. This statement is all the more important in reference to the lopping off of limbs in France, to be followed by a re-amputation in this country—a proceeding which appears to me barbarous in the extreme.

The saline treatment labours under the same disadvantage as eusol—a healthy wound surface is produced which requires the substitution of astringents to induce healing, and even with this change of dressing progress must necessarily be slow. In illustration of these points I quote the two following cases:

A German petty officer had his left arm shattered in a naval action in the North Sea on March 25th, 1916; the arm was removed on his own boat by means of a penknife about 4 in. below the shoulder; he was rescued from the sea by one of our torpedo boats; he remained on board for two days and was then taken to —— where the flaps were trimmed, the wound was dressed every two hours during the day and every three hours during the night with saline solution. After sixteen days he was transferred to a general hospital, and the wound dressed daily with eusol for four days, when he was sent to the Military Hospital, Lincoln. The wound presented a healthy granulating surface, a broad piece of strapping had been placed round the upper arm at the base of each flap, and another piece to bring the flaps together. I removed the strapping at 10 a.m., when I found the flaps gaped, so I painted the surface of the wound and the adjoining skin with 20 per cent. ichthyol in glycerine, and applied gauze, absorbent wool and a bandage. At 7 p.m. I found the flaps no longer gaped, having become adherent in this short period of time; the same dressing was applied. In one week the wound has become reduced to half its original size and in another week it will have completely healed over. The chief point of interest in this case is the rapid osmotic action of the glycerine.

Pte ——, on October 13th, 1915, was hit in the left hand by a bullet from a Maxim while he was in a German trench; first aid was applied and he then walked to the field ambulance where a dry dressing was put on. He was sent to Rouen for three weeks; he was next transferred to a general hospital in England, where he remained under treatment for nineteen days, and then he came under my care in the Military Hospital. He stated that the two end digits of his left ring finger had been removed at the general hospital. To relieve suppuration two incisions had been made in the palmar surface of the hand —namely, one near the little finger, another in the centre of palm, and there was a third incised wound 1 in. above front of wrist; a drainage tube had been passed from this wound to the wound in the centre of the palm. I removed the drainage tube at the first dressing, and did not replace it; no useful purpose was served by it, as the anterior annular ligament of wrist compressed the tube.

As a substitute for drainage tubes, I always syringe out with pure spt. vini rectificat., and in this case the spirit passed

readily from the one wound to the other; a sinus extended from the wound above the wrist for 2 in. higher up the arm; the skin of the hand was in a very sodden state from previous wet dressings. The hand was very much swollen, exceedingly painful, and suppurating freely; it had been kept in a bath for forty-eight hours, during which time the patient had had no sleep. Equal parts of ichthyol and glycerine were painted on the wounds twice daily, and where the drainage tube had been pure spirit was run through once daily. In one week the wounds had contracted, the discharge was less, and there was no pain in the hand. On the tenth day after admission there was no discharge from the wounds, the hand was no longer swollen, there was no return of pain, and the patient could move his fingers and wrist freely without pain. On the thirteenth day the wounds in the hand had healed and the wound above the wrist was about the size of a sixpence; in another week this had completely healed.

In this case there was no improvement during nineteen days' treatment with wet dressing, but a change to ichthyol and glycerine resulted in rapid contraction of the wounds and cessation of suppuration.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE DANGER OF IODINE SOLUTIONS FOR STERILIZING THE SKIN IN ABDOMINAL OPERATIONS.

THERE are probably no intra-abdominal conditions that may be the source of more continuous suffering to a patient or be more difficult to treat than peritoneal adhesions. It certainly, therefore, behoves us in our own work to avoid any practice, however commendable for other reasons, that might conduce to such an undesirable result. It has long been my custom to discard the use of iodine solutions for the sterilization of the skin prior to an abdominal operation, although I have freely applied them after the peritoneal cavity has been efficiently closed. My reason was that I had occasionally seen the skin irritated as the result of its application; and the fear arose in my mind that the peritoneum, being a much more delicate structure than the skin, might suffer equally, if not to a greater degree, should any of the iodine applied to the skin gain access to it, directly or indirectly. My fears were later confirmed by papers by Propping and Bertelsmann in the *Zentralblatt für Chirurgie* (Nos. 19 and 26). The former proved by experiments on dogs that abundant fibrous agglutinations resulted from the injection of a solution made up of twenty drops of tincture of iodine in 80 c.cm. of salt solution into the peritoneal cavity. He further stated that he had seen six cases of ileus which he believed to be attributable to adhesions the result of iodine irritation. Bertelsmann recognized the possible danger connected with the use of iodine for sterilizing purposes. I have already drawn attention to the subject in my *Practice and Problem in Abdominal Surgery* (p. 67), where the matter is more fully discussed. The possible evils of the use of iodine in abdominal work has recently received further confirmation in a contribution to the *Annals of Surgery* (February, p. 198) by M. H. Walker and L. M. Ferguson, whose investigations were undertaken ostensibly for the purpose of determining what measures could be employed to prevent the formation of peritoneal adhesions. But, in their experiments upon rabbits, they, first of all, sought to produce adhesions, and found that "the densest aseptic adhesions were caused by touching the peritoneum lightly in five places with a small gauze pledget, dipped in half-strength tincture of iodine." One of the conclusions at which they arrived is "iodine should be used in abdominal surgery with great care, or better, not used at all, for a very little of it allowed to touch the bowel causes masses of adhesions."

I will not enlarge on the question as to what may be used in place of iodine for the sterilization of the abdominal skin; suffice it to say that the usual methods for the initial cleansing of the skin followed by the application of, first, a compress of carbolic lotion (1 in 40) for several hours, and, second, another compress soaked in lotion (1 in 20) for an hour or so will fulfil every requirement of efficient sterilization. When time does not admit of the longer process of preparation, spirit can be used, or even 1 in 20 carbolic solution alone.

A. ERNEST MAYLARD, B.S., M.B.Lond.,
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Surgeon to the Victoria Infirmary, Glasgow.

EXTRACTION OF INTRACRANIAL FOREIGN BODIES.

ON March 14th a boy, aged 16, walked into my surgery complaining of a blow on the head from a falling tree. My partner, Dr. Burn, saw him, and diagnosed a depressed fracture. I operated in the evening, and found what appeared to be a piece of detached bone. I removed with forceps what turned out to be a fragment of a branch. It was irregular, but measured approximately 1¼ in. by ¾ in. It had been driven completely through the skull, and was lying under the parietal bone. After removal of the wood I elevated the depressed bone, and closed the wound with the exception of a space left for drainage.

The patient progressed well till the seventh day, when he had very violent convulsions. I opened up the wound again to allow of more free drainage, and he made a complete recovery, returning to work five weeks after the accident. A striking point about the case is that there is no history that the boy was ever in the slightest degree unconscious, and that he was able to travel a distance of four miles, partly by train and partly on foot, after such a severe head injury.

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British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

GRENADA BRANCH.

The Control of Yaws.

THE first meeting of the Grenada Branch was held at the offices of the International Health Commission, St. George's, Grenada, on May 5th, when the President, the Honourable E. F. HATTON, Colonial Surgeon, read a paper on the control of yaws in Grenada. There was, he said, evidence that the disease was introduced into the West Indies by slaves brought from the West Coast of Africa. Though the traffic in slaves was stopped in 1807, slaves taken from slave ships by the British navy were set free in Grenada at a much later date. Down to the abolition of slavery yaws was very prevalent; its contagious nature seemed to have been recognized from a very early date, and nearly every estate had its yaws house for segregation. Slavery was finally abolished in 1834, but a system of apprenticeship followed for four years, during which the yaws houses were kept up. At the end of this four years, in 1838, the slaves scattered all over the colony, many of them taking up gardens in the hills, and the yaws houses were done away with. In 1875, 33 cases of yaws were treated in the colony hospital, and in the following year an auxiliary hospital, providing for sixteen males and ten females, was opened. The number of cases admitted to it rose until it reached 118 in 1882. Increased accommodation was opened at the yaws hospital in January, 1883, at which time it was estimated that there were 800 cases in the colony, or about 2 per cent. of the population at the time. The number of cases admitted to the hospital fell from 376 in 1883 to 34 in 1894; thereafter it rose, with some fluctuations, until the large total of 605 was reached in 1915. Dr. Hatton pointed out that segregation, the policy relied upon for over forty years in Grenada, St. Lucia, and other neighbouring colonies, had not been successful. Yaws was an endemic disease, and isolation failed in such diseases, owing to the difficulty of isolating every case. There had always been cases of yaws hidden away, and it was doubtful whether all the cases discharged from the yaws hospital were cured; probably many of them were capable of communicating the disease to others under certain conditions, even after the outward signs had disappeared. The treatment of cases with salvarsan was begun in 1912 with encouraging results. The number so treated was 55 in 1914 and 20 in 1915. The decrease was due to the stoppage

of the supply of salvarsan. A large number of the inmates of the yaws hospital were children, but probably adults were less susceptible only because they had suffered in childhood. The East Indian adult immigrants suffered as frequently as their children. The disease was more prevalent in the country than in the town, and was much more prevalent in some islands than in others, although domestic and general sanitation were not more advanced than in Grenada. Dr. Hatton considered that as isolation had been tried for forty years without eradicating the disease it should be abandoned. It was very unpopular with the people, and without their co-operation could not be thoroughly carried out. The average stay of a patient in hospital was four months, and the long separation from friends was irksome, so that sufferers sought to hide the fact of infection, and parents concealed infection in their children. Dr. Hatton concluded by recommending the adoption of the following preventive measures:

1. Making the disease a notifiable one under the Public Health Ordinance.
2. Education of the people through the sanitary inspectors and by leaflets as to the nature of the disease and the manner in which it is spread from one person to another.
3. Sanitary inspectors to make house-to-house inspections, and to notify every case of this disease. These officers would give to every adult, or, in the cases of children, to their guardians, a numbered card, stating that the bearer had yaws and must attend at the district dispensary once a week until certified to be cured by the district medical officer. A record of these cards would be kept in the Colonial Surgeon's office, and every one of them would have to be accounted for.
4. Dispensaries to be opened in each district, where persons suffering from yaws will be treated, and where any person of the labouring class suffering from a sore of any kind will be attended to and supplied with proper dressings.
5. A general campaign to improve domestic sanitation by preventing overcrowding; encouraging the use of glass to admit sunlight; improving ventilation; the flooring of houses; the use of beds for the children.

The active treatment recommended consists of a free use of salvarsan and large doses of potassium iodide.

To carry out the treatment by salvarsan I recommend that three or four small hospitals be opened in the different parishes. Each hospital should accommodate four persons and be under the charge of a nurse.

Patients to be treated with salvarsan would be admitted for a few days only, and discharged as soon as it was safe to do so; further treatment to be undergone as outdoor patients.

As each patient would only be a few days in hospital a light diet only would be necessary.

The discussion which followed turned mainly on administrative questions. Dr. DURRANT and Dr. HUGHES approved of decentralization, but the former expressed the opinion that four dispensaries would be inadequate, as the distances patients would have to travel would prevent regular attendance; he suggested that the residence of every medical officer should be a dispensary under the scheme. Dr. PATERSON, Dr. O'NEALE, and Dr. ALEXIS spoke in favour of treatment by salvarsan at one central hospital, the first named observing that if one week were sufficient to dispel outward manifestations, further observation and treatment might be carried out by the district medical officers. Dr. BISHOP suggested, with the view of destroying the local foci of infection, that one area might be dealt with at a time, the patients being treated at a dispensary with salvarsan and kept for a reasonable time to get rid of the infection, and that this should be followed up by observation and treatment in their homes. When one area had thus been dealt with, another might be undertaken. Dr. MACDONALD agreed that the main point was to deal with the foci of infection. The recent discovery that a spirochaete was the cause of Weil's disease or a form of epidemic jaundice, and the demonstration that the route of infection was through the skin, was very suggestive. The improvement of the people's homes and the abolition of the damp and inevitably infected earth floors so frequent in the country should be aimed at. At the same time he admitted that salvarsan might aid prevention by removing the foci of infection. Dr. HATTON, in his reply, said that he was not opposed to segregation, but, believing that it was beyond the resources of administration, had endeavoured to put forward a practical alternative scheme. Undoubtedly the question of transport was a serious difficulty under any scheme, but on the whole the control by district dispensaries in close contact with the people's homes seemed to be the most economical, and to contain the greatest possibility of effecting most good.

At an earlier stage of the meeting the president had referred with regret to the death of Dr. Claude Hughes, who, in the few short years of his professional career, had won the esteem and respect of his colleagues and the love of his patients. The rules of the Branch were discussed seriatim and adopted. Dr. Bishop was appointed Honorary Treasurer and Dr. Angus Macdonald Honorary Secretary and Representative at Representative Meetings. The President entertained members to breakfast, and Dr. Macdonald gave a lantern demonstration of pictures connected with the ankylostomiasis campaign.

Reviews.

SCIENCE AT OXFORD.

To Oxford men generally, and to Magdalen men in particular, Mr. GÜNTHER's Register of the Daubeny Laboratory[1] will appeal as an interesting contribution to the history of the part played by Waynflete's foundation in the advancement of science in Oxford. In this sphere of activity the University owes much to its constituent colleges. It would be invidious to draw distinctions where all alike have helped. Fortunately, some of these institutions are well endowed—Magdalen, amongst the number, having an income nearly approaching that of the University itself. To their credit be it said that, in most instances, the wealthy colleges have responded generously to the appeal of the University for financial support, and in this respect Magdalen has set a bright example. For this help those associated with science in Oxford are deeply grateful. At the same time, whilst congratulating Mr. Günther on the array of facts set forth in proof of the success of Magdalen men in the realm of science, he seems to us rather to underestimate the influence of university teaching as distinct from collegiate tuition on these men's undergraduate and post-graduate careers.

As a science tutor of long standing, Mr. Günther's views on the subject of collegiate instruction are worthy of all respect and consideration. On this matter he expresses his opinions in a somewhat lengthy preface, and it is to this part of the volume that we propose more particularly to direct attention. The author, in no unmeasured terms, criticizes the baneful influence exercised by the predominance of the classical element within the University on the development of science teaching. Whilst no doubt in some instances these criticisms are well merited, Mr. Günther must admit that during his twenty-five years' tenure of office the attitude of this section of the University has been very much modified, as proved by the liberality with which the university, according to its means, has built, staffed, and equipped many new departments for the teaching of science. To us it seems the more excellent way rather to encourage this more liberal and progressive policy, than to condemn the majority for their attitude in the past. The experience of recent events will not be lost on those who, possibly through lack of knowledge, have hitherto been half-hearted in their support of more up-to-date methods. We are all likely to profit, science as well as other branches of knowledge. Confidence inspires confidence, and we look forward to the day when, in the reform of our educational system, we can all stand united.

Further, Mr. Günther lays much stress upon the advantage of colleges being provided with laboratories; to this no reasonable objection can be taken, provided they are used for purposes of research by the members of the staff of the college; but in view of the fact that the University has incurred large expense in the provision of university laboratories, the upkeep of which is largely dependent on the fees accruing from undergraduates, it seems undesirable that a college should enter into competition with the university as far as actual teaching is concerned, and so deprive that institution of a source of income to which it is justly entitled. Rather would we wish to see a closer co-operation between the parent body and the constituent colleges—a co-operation all the more necessary when the

[1] *The Daubeny Laboratory Register, 1904–15.* By R. T. Günther, M.A., F.L.S., Fellow and Tutor of Magdalen College. Oxford: Printed for the Subscribers at the University Press. 1916. (Med. 8vo, pp. 305; 3 illustrations. 7s. 6d. net.)

resources of the University are strained to the utmost to meet its obligations.

Mr. Günther assumes that he makes a strong case out of the effect produced by the incidence of a "close time" for scholarship examinations on the output of science students taking medicine in his own college. Before this arrangement came into operation in 1900 he states that for the previous twelve years there were twenty-six such undergraduates at Magdalen, whilst during the twelve years subsequent to this date there were only seven. The author attributes this falling off in numbers to the circumstance that the college was debarred from always examining at a time when it could get the pick of the best men. In fairness, however, to many other colleges not so well provided with scholarship endowments, it may be pointed out that during this period the numbers entering these colleges have largely increased, proving obviously that the question must be considered from the wider standpoint of university policy rather than from the interests of one individual college.

These and many other points are some of the issues raised by Mr. Günther, and we can commend the perusal of his views to those who are interested in the inner working of the University, for he states very explicitly the opinions of one who represents the collegiate as distinct from the university attitude towards instruction. Of the benefits of appropriate collegiate tuition no one acquainted with Oxford can have for a moment any doubt, but it is questionable if it is sound policy to carry this too far to the detriment of the institutions which the University has provided to meet its educational needs.

To co-operate with the university rather than to compete with it should surely be the aim of its constituent colleges.

OBSTETRICS AND GYNAECOLOGY.

No book on obstetrics met a more obvious want than did Professor MUNRO KERR'S *Operative Midwifery*, on its first appearance eight years ago. It is a pleasure to add that no book could have met the particular want more admirably, and accordingly it has become a standard work. But the trend of opinion in operative midwifery has meantime changed somewhat, new methods of operating having been introduced and others discarded. Some revision of the volume was therefore needed, and this the author has well carried out in his third edition.[2] Except where necessary to bring it up to date the book has not been altered, and the features which have made it so valuable as well as so delightful a book to read are again found in it.

The first noticeable new section in the present edition deals with dystocia due to "contraction" and "retraction" rings. This subject has been fully discussed in the last six years, and the most important contributions to it have been made by British obstetricians. Dr. Munro Kerr states that he has encountered obstruction of this sort in "oblique presentations," and in head presentations where the head was low in the vagina and the shoulders were caught. He agrees with most writers in recommending Caesarean section in clean cases where the child is alive, but in others craniotomy after a full dose of morphine and atropine and an interval of rest to the mother. In regard to the treatment of myomata during pregnancy the advantages and encouraging results of enucleation as opposed to hysterectomy are fully expressed. The dangers of appendicitis during pregnancy, labour, or the puerperium are dwelt upon, and the advice given to treat all such cases on strictly surgical lines irrespective of the obstetrical condition.

The last few years have enabled us to form a more matured judgement on the real value and place of operations for enlarging the pelvic girdle. As between pubiotomy and symphysiotomy Dr. Munro Kerr withholds a final verdict, but he emphasizes—what is much more important than the choice of operation—the very careful choice of cases for operation, and states fully the conditions which indicate and justify this form of interference. On the very difficult question of Caesarean section or hysterectomy in presumably infected cases where the child is still alive, and the only alternative is craniotomy, the author takes a very sane attitude, and one that will bring comfort to many conscientious practitioners.

"I am still convinced," he says, "that craniotomy should sometimes be chosen even although the child is alive. So long as hysterectomy is the only alternative to craniotomy in such cases, it is very questionable if we choose wisely when we select the former operation. Do we really save mothers and children? We do not save mothers, for the maternal mortality from hysterectomy and craniotomy in presumably infected cases is almost identical; and although we undoubtedly save at the time a few more children by choosing hysterectomy, we sterilize a large number of young mothers upon whom, if craniotomy were performed in the first instance, Caesarean section might be done, and repeated with every certainty of success should other pregnancies follow."

Hundreds of practitioners are yearly forced into this position without any real chance to make the choice, and the weighty opinion quoted will undoubtedly mitigate the revulsion of feeling with which the necessity of the situation must often fill them. It is to be hoped that the work of prematernity clinics will diminish the number of cases of this sort in the future. Of extraperitoneal Caesarean section, about which there was considerable enthusiasm in Germany, the author has no experience, but he probably sums up the opinion of most obstetricians in this country when he writes:

"So far as I can judge it presents no advantage over classical Caesarean section, and will entirely disappear and be forgotten unless it is proved that the cicatrix in the lower segment is decidedly stronger than one situated in the upper part of the body of the uterus."

Vaginal Caesarean section he regards as an operation of great value, at present abused by too free employment. Up to the twenty-fifth week of pregnancy it is the best way of rapidly emptying the uterus; after that the abdominal route is the more sound in principle. We entirely agree with him in his absolute condemnation of this vaginal operation in cases of placenta praevia. The abdominal operation, however, he advocates in elderly primiparae in whom there is active bleeding, an undilated cervix, and a viable child. In accidental haemorrhage Dr. Munro Kerr does not despise plugging where the membranes are intact and the bleeding external. In other cases he uses the metreurynter, Bossi's and similar dilators being utterly condemned. Caesarean hysterectomy may have to be done in concealed haemorrhage, and here the vaginal route offers many advantages.

One of the results of the war in France, as also to some extent in this country, has been to compel many practitioners, who had long given up operating in their civil practices, to renew their familiarity with the actual practice of surgery either in the field or in war hospitals, or, owing to the scarcity of specialists, at home. We have seen this reflected in the output of new books in this country dealing with the various departments of surgery more directly connected with the war. But in France Professors LE DENTU and PIERRE DELBET have enlisted the help of a large number of distinguished collaborators in the production of a complete *Nouveau Traité de Chirurgie* in many volumes, and dealing with all phases of surgery, whether connected with the war or not. The thirty-fourth of these volumes, all undertaken and produced since the outbreak of the war, is upon gynaecology,[3] and is from the pens of Professors FORGUE and MASSABUAU of the University of Montpellier. The book, which is massive, containing more than 900 pages, opens with a section upon the methods of examination in gynaecology. This is followed by sections on diseases of the vulva and vagina; vesico-vaginal and other fistulae; diseases and tumours of the uterus; pelvic inflammation; diseases and tumours of the ovaries and tubes; malformations of the genital organs; and, finally, by a section on the general technique of a gynaecological laparotomy. The more important and historical papers on the different subjects are mentioned in the introduction to each section. French and German literature is extensively recognized, but the authors have not drawn so fully upon British and American work. In several instances this is a serious omission—as, for example, to mention only one instance,

[2] *Operative Midwifery. A Guide to the Difficulties and Complications of Midwifery Practice.* By J. M. Munro Kerr, M.D., C.M.Glasg. Third edition. London: Baillière, Tindall, and Cox. 1916. (Roy. 8vo, pp. 741; 308 figures. 25s. net.)

[3] *Gynécologie.* Par E. Forgue, Professeur de Clinique Chirurgicale, et G. Massabuau, Professeur d'Anatomie Pathologique à l'Université de Montpellier. *Nouveau Traité de Chirurgie.* Publié en fascicules, sous la direction de A. Le Dentu et P. Delbet. XXXIV. Paris: J. B. Baillière et Fils. 1916. (Roy. 8vo, pp. 923; 283 figures. Broché, Fr.25; cartonné, Fr.27.)

when no reference is made to Teacher's important work upon chorion-epithelioma. Indeed, the section upon ectopic gestation is the only one in which we observed anything approaching a proportionate recognition of British or American gynaecological literature. The pathology of the various conditions is fully considered, and, where necessary, conflicting views are fairly stated. The authors' own views are, however, always clearly expressed upon the controversial points, and the reader is not left in doubt as to their own teaching. A great many excellent illustrations, both macroscopic and microscopic, are from their own specimens. The illustrations are reproduced in a very satisfactory manner, but some of the histological views suffer from being drawn under too high a power and in too diagrammatic a manner. The illustrations of operative technique are clear and helpful, and in many instances might with advantage to the reader have been made more numerous.

It is interesting to find that much more space is given to the subject of fistula than is usual in our books. The section is therefore of peculiar interest to those who may be called upon to deal with this troublesome condition. Two points emphasized by the authors may be mentioned—first the fact, so often imperfectly grasped, that the success of an operation in fistula largely depends on the care taken beforehand to render the vagina and the bladder as aseptic as possible; secondly, the value in difficult cases of deep incision of the perineum—the paravaginal incision—so as to secure a good view of, and direct access to, the anterior vaginal wall. In the chapter on fibromyomata of the uterus we searched in vain for any account of necrobiosis or "red degeneration" of these tumours. There is likewise no mention of endotheliomata of the uterus even under the heading of sarcoma. However debateable the existence of these tumours may appear to the authors, one would expect some mention of them in a volume of this size. The authors are enthusiastic supporters of the removal of the uterus in all cases of double pyosalpinx. They maintain that it simplifies the operation by giving more room, that it permits of surer haemostasis and more perfect "peritonization," and that it is therefore less likely to be followed by the formation of adhesions. They prefer the supravaginal operation in all such cases.

Those who enjoy reading fluent French—and we hope their number is rapidly increasing in our profession—will find in the volume a thoroughly sound presentation of the subject of modern gynaecology; and those who are already familiar with the subject will find many points of interest and suggestiveness. Under any circumstances the book would be one upon which the authors would deserve hearty congratulations, but as an achievement begun, continued, and ended under the stress of the great war it is doubly meritorious.

THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

SIR CHARLES CAMERON'S elaborate *History of the Royal College of Surgeons in Ireland*,[4] now in its second edition, contains a vast amount of information concerning the progress of medical science in Ireland from the earliest days. The histories of the various Irish medical schools are traced, long chapters deal with the medical bibliography and medical worthies of Ireland at various epochs, and the many charters of the Royal College of Surgeons are recorded in full. Accounts are given of the college library, school, and museum, and the reader will find chapters on the various private schools of medicine and other educational establishments available for the use of medical students in Ireland. In addition, the author has collected a vast amount of biographical information concerning many of the eminent Irish surgeons and physicians whose names occupy such important positions in the history of the art of healing. The book is well illustrated and must be regarded as a storehouse of information to which all who are interested in the history of Irish surgery will apply.

[4] *History of the Royal College of Surgeons in Ireland and of the Irish Schools of Medicine, including a Medical Bibliography and a Medical Biography.* By Sir C. A. Cameron, C.B. Second edition, revised and enlarged. Dublin: Fannin and Co.; London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd.; Edinburgh: J. Thin. 1916. (Med. 8vo, pp. 894; illustrated.)

NOTES ON BOOKS.

DR. HENRY J. HIBBERD, whose views on breads for children were briefly expressed in a letter published in this JOURNAL on March 4th, 1916 (p. 361), has now stated his opinion more at length in a pamphlet,[5] in which he argues strongly for the revival of the old method of milling, and adds some words on the merits of a co-operative system, such as that devised by Sir Horace Plunkett for Ireland.

The Night Cometh,[6] by PAUL BOURGET, is one of those profound and perhaps uninteresting efforts of psychological analysis with which that talented author has been enriching the world of novels for several decades. Here we have a drama of love-tortured souls, with a setting of hospital work, battle, murder, suicide, and sudden death. The protagonist, a celebrated Paris surgeon, figures in these pages also as a profound neurologist; he has invented an operation whereby "the bulbary syndrome" may be averted in certain traumatic cases, and so the novel is to be regarded as of special interest to surgeons and physicians. They should, however, read the book in the original French, for the translator has justified the gibe *traduttore traditore*.

Back to the World[7] is a novel dealing with the problems that may face a married heroine with puerperal insanity when she recovers and returns to ordinary life after five-and-twenty years of seclusion in an asylum. In this instance the heroine had been badly treated at the outset, and when she returned to her husband she found herself *de trop*. Fortunately for herself and others, however, she was a victim of the first air raid in London, and died. The book takes the form of the diary of a woman with a grievance, and so is painful reading. The subject with which it deals is unpleasing, and it receives unsympathetic and pessimistic treatment at the hands of the authoress. One may doubt, indeed, whether such topics as these are at any time profitable subjects for novels.

[5] *Our Children's Bread, as it affects National Health and Land Reform.* By Henry J. Hibberd, M.R.C.S. Brockenhurst, Hampshire: J. R. Stevens. (Price 3d.; post free 4d.)

[6] *The Night Cometh.* By P. Bourget. Translated by G. F. Lees. London: Chatto and Windus. 1916. (Cr. 8vo, pp. 247. 6s.)

[7] *Back to the World.* By Mary Wall. London: Chapman and Hall, Ltd. 1916. (Cr. 8vo, pp. 328. 6s. net.)

MEDICATED WINES.

THE Central (Liquor) Control Board is taking in hand a number of abuses to which the medical profession has been calling attention for a good many years past. The action now taken, under the pressure of war conditions, is evidence that, although at the time little effect seemed to have been produced, yet a wider influence was in fact exerted than was apparent on the surface. The *Gazette* for July 7th contains an Order by the Central Control Board relating to the sale of medicated wines, made under the Acts and regulations relating to the defence of the realm. It provides as follows:

On and after August 7th

> "No person shall either by himself or by any servant or agent sell or supply to any person in any licensed premises for consumption off the premises or dispatch therefrom any intoxicating liquor in the form of or prepared as (*a*) medicated wine or (*b*) any mixture or preparation which contains any drug or medicament or is sold or advertised for sale as containing or purporting to contain medicinal properties except in a bottle or other vessel bearing a label correctly stating in clear and legible words or figures the amount of proof spirit contained in such medicated wine or mixture or preparation."

Nothing in the order shall be deemed to affect the sale of

(*a*) Any medicine mixture or preparation appearing in the *British Pharmacopoeia* or the *British Pharmaceutical Codex*.

(*b*) Any medicine mixture or preparation which is made up for a customer on the signed prescription of a medical practitioner.

(*c*) Medicated or methylated spirits or spirits made up in medicine and sold by medical practitioners or chemists or druggists.

The expression "licensed premises" includes any premises or place where the sale of intoxicating liquor for consumption off the premises is carried on under a licence. The order does not affect the sale or dispatch of intoxicating liquor to a trader for the purposes of his trade. In Scotland "exciseable liquor" is to be substituted for "intoxicating liquor."

Any person contravening any provision of this order, or of the Liquor Control Regulations, is liable to imprisonment for six months with hard labour and a fine of £100.

ROYAL MEDICAL BENEVOLENT FUND.

(Concluded from vol. i, 1916, p. 888.)

THE following is a continuation of the summary of cases relieved by the Committee at its meeting on June 6th:

Widow, aged 38, of L.S.A.Lond. who practised in North London up to a few years ago, and latterly and up to his death in March of this year had been acting as locumtenent. Applicant was left unprovided for with five daughters, aged 17 months to ten years; at present they are staying with her mother, who cannot afford to keep them. Applicant's furniture is in store, with a large debt owing on it. If she could get her furniture she hopes to be able to make a living by taking in boarders. Only income £12 per annum from a relative. An immediate special grant of £5 has been given, and the Guild are already investigating the case. Voted £12 in twelve instalments.

Widow, aged 61, of M.R.C.S.Eng. who practised at Whitechapel and died in 1913. Applicant's only income is £28 per year, the income from the investment of a life insurance, and 3s. per week from a son. Son-in-law used to help by paying the rent, but owing to the war has had to discontinue this, so applicant is in great difficulties. Voted £12 in twelve instalments.

Widow, aged 64, of M.D.Glasg. who practised at Glasgow and died in 1908. Applicant was left totally unprovided for, and has tried to make a living by taking in lodgers, but recently has been unsuccessful, and during the last year has only received £20 from this source. Only other income £22 from other charities. Relieved twice, £24. Voted £12 in twelve instalments.

Widow, aged 51, of L.S.A.Lond. who practised at Leicester and died in 1910. Applicant was unprovided for, with two daughters now 21 and 22 years of age, and a son now aged 14. The girls are now both working, and pay their mother £1 16s. per week for their board and lodging. Applicant's health is bad, and she is only able to earn a little by needlework. Owing to the high price of food, finds it difficult to get on. Relieved four times, £46. Voted £12 in twelve instalments.

Widow, aged 58, of M.R.C.S.Eng. who practised at Enfield and died in 1905. Only income £37 from property and £40 from friend. Has two daughters, one married and the other a permanent invalid. Relieved five times, £25. Voted £5.

Daughter, aged 64, of M.R.C.S.Eng. who practised at Lydney and died in 1880. Applicant lost all her income through a defaulting trustee. Only permanent income now outside help from the Fund, a R.U.K.B. Association pension of £21. Relieved ten times, £104. Voted £12 in twelve instalments.

Daughter, aged 52, of M.R.C.S.Eng. who practised at Box and died in 1894. Is a permanent invalid. Lives with two sisters, only one of whom is able to earn a little as a companion, and the other has help from the Fund and Guild and another charity. Relieved five times, £66. Voted £12 in twelve instalments.

Daughter, aged 77, of M.R.C.S.Eng. who practised at Hackney and died in 1859. Applicant lost all her capital through bad investments by trustees, and is now dependent on friends, who provide £55 per annum. Relieved four times, £51. Voted £15 in twelve instalments.

Daughter, aged 64, of M.R.C.S.Eng. who practised at Liverpool and died in 1885. Applicant was left unprovided for, and acted as matron of a private home for many years at a small salary, and was unable to save, and had to retire after 60 years of age, and is now too old to undertake work. Has recently been elected to a pension of £30 from another charity. Relieved twice, £20. Voted £12 in twelve instalments.

Daughter, aged 67, of M.R.C.S.Eng. who practised in London and died in 1890. Applicant, with two sisters, were left unprovided for, but have tried to earn a living by taking in boarders and teaching, but of late have not been successful, and the house and furniture is in a bad state of repair. One of her sisters is also in receipt of help from the Fund. Voted £12 in twelve instalments.

Widow, aged 69, of M.R.C.S.Eng. who practised in Jamaica and died in 1884. Was left totally unprovided for at husband's death. Has three children, but none able to help. Only income a pension of £26 from a society in Jamaica, and occasional help from her brother. Health very bad. Relieved eleven times, £75. Voted £12 in twelve instalments.

Daughter, aged 59, of L.S.A.Lond. who practised at Long Sutton and died in 1879. Only income £25 per annum from dividends. Acts as housekeeper without salary, so as to keep together the home for the children of her late employer. Relieved once, £12. Voted £12 in twelve instalments.

Widow, aged 55, of M.R.C.S.Eng. who practised at Stockton-on-Tees and died in 1897. Applicant was left without means with two young children, one of whom is now in the army, and a daughter who is a clerk, and pays 12s. a week for board and lodging. Has an army allowance of 7s. per week from son. Applicant acts as caretaker at a shop, so lives rent free. Health very indifferent. Relieved twelve times, £106. Voted £9 in twelve instalments.

Widow, aged 60, of L.R.C.P.Edin. who practised at Streatham and died in 1913. Was left entirely without means, and endeavours to make a living by taking in paying guests, but has not been successful recently. Receives a little help from friends. Relieved three times, £24. Voted £1 and her case referred to the Guild for a report.

M.R.C.S.Eng., aged 49, who practised at Wigan and abroad. Health became thoroughly undermined when abroad, and he had to be sent home and has not been able to work since. Lives with an aunt who cannot afford to keep him. Relieved twice, £20. Voted £5 and referred to the Guild.

Subscriptions may be sent to the honorary treasurer, Dr. Samuel West, at 11, Chandos Street, Cavendish Square, London, W.

The Royal Medical Benevolent Fund Guild is now called upon, as a result of the war, to deal with many widows and children who, in happier times, would not have thought of asking for assistance. It is glad to receive secondhand clothing and household linen. The class of clothes most wanted is that suitable for boys and girls working in offices, for women, and for old men. The gifts should be sent to the secretary of the Guild, 43, Bolsover Street, W.

EDINBURGH SCHEME FOR MATERNITY SERVICE AND CHILD WELFARE.

I.

THE scheme which Dr. Maxwell Williamson, M.O.H. Edinburgh, has, after consultation and conference with various individuals and boards in the city, put into form and presented to the town council, is a large one. It has, of course, been adapted to the local conditions as they exist, and these include a large number of charitable institutions, such as hospitals and dispensaries; specialists in every branch of the medical profession; and a great medical university and extramural school with students in attendance requiring much clinical and practical instruction. These circumstances, whilst simplifying the problem in one direction, have complicated it in another, and have given to it peculiarities which may not be needed in other places.

The Preamble.

The Medical Officer begins by pointing out that the Notification of Births (Extension) Act for 1915 confers upon local authorities the power to frame and carry out schemes for the preservation of the health and life of the mother during her maternity periods, and for the supervision of the life and health of children under 5 years of age—the time when they are usually handed over to the continued care of the education authority. Allusion is made to the serious sacrifice of child life in all large communities, part of which at least is preventable. In the city of Edinburgh the total population under 5 years of age is close upon 29,000, and the average annual death-rate among these is 38 per 1,000; or, to put it in another way, during the five years (1911–1915) 5,578 children out of the total population of 29,000 in the city died. Further, the number of deaths in the various wards of the city differ considerably. During the five years referred to, the following number of children under 5 years died in the several wards: 112 in Morningside, 118 in Haymarket, 159 in Merchiston, and 172 in St. Andrew's, whilst in certain other wards of the city the numbers were enormously increased as follows: 374 in Gorgie, 472 in Dalry, 641 in Canongate, 669 in St. Leonard's, and 797 in St. Giles. The population does not greatly differ in the various wards, so that obviously conditions existed in certain of them the removal of which would cause a decrease in the deaths. The two outstanding causes of deaths among young children were measles and whooping-cough, the former during the five years under review exacting a toll of 451 deaths and the latter 489. There were 756 deaths under the heading of "pneumonia," but in a very large proportion of them it was a complication of one or other of these two diseases, the great majority of deaths from which occurred in the poorer districts of the city, where unsatisfactory surroundings, neglect of proper treatment, and often the absence of a medical attendant, speedily ended in the supervention of serious complications. Dr. Williamson's scheme is to be directed specially against these things, but he advises that both these diseases should be notifiable diseases, and that the number of hospital beds for their treatment should be substantially increased. The deaths among young children resulting from prematurity of birth, or associated in some way with maternity conditions, numbered 677; many of these under suitable treatment might undoubtedly have been prevented. The scheme would pay special attention to these causes. Again, the large number of fatal cases grouped under the general headings of digestive disease with diarrhoea and enteritis (508) were in many instances preventable, and would come under the action of the scheme.

The medical officer admitted that there was in Edinburgh less necessity for a far-reaching child welfare and maternity scheme than in some other places; but even in that city there was urgent need for a properly conceived scheme to bring together the existing agencies. In the past there had been overlapping and consequent loss of time, energy, and efficiency, amongst the agencies, some of which were excellent in every way. The city was happy in possessing not only an unusual number of voluntary agencies, but magnificent institutions which could be utilized in the efficient carrying out of a perfected child welfare and maternity scheme. It was conceivable that in some localities a special building might have to be erected, but speaking generally it was only necessary to select and make arrangements with the various hospitals, institutions, and agencies in order to carry the scheme fully into effect. The memorandum issued by the Local Government Board did not contemplate the inclusion of every institution, but only of those which the framers of the scheme considered necessary, and this restriction had been kept in mind.

The Scheme.

The work of constructing a scheme was greatly simplified by the fact that the institutions which could be utilized were situated in the very districts of the city where the cry for the exercise of child and maternity care and supervision was most urgent. In some of the institutions alterations and modifications and even extensions would be required to fit them for the new work, which would be both curative and preventive instead of simply curative. As far as possible it would be well to have both mother and child treated in the same institution although not necessarily on the same day. The whole scheme would be under the medical officer of health, and the central office would be the Public Health Department.

Main Centres.

The Edinburgh Royal Hospital for Sick Children was already recognized as a place to which children of practically all ages could be taken for advice and treatment; but in order to fit it into the scheme some rearrangements would be necessary. The hospital would have to agree to regard itself as a main centre under the Child Welfare Scheme, to hold two special clinics a week for children under 5 years of age, to recognize the physicians for children appointed by the various dispensaries under the scheme as its extern assistant physicians (in the same way as the Royal Maternity Hospital already recognized the obstetric physicians of the dispensaries), to keep records of the cases dealt with at the hospital and make them available for use by the Public Health Department, and that the hospital should be regarded as a consultative institution to which the more serious cases could be remitted from other institutions under the scheme. The second main centre, the Royal Maternity Hospital, would hold outdoor clinics conducted by a senior physician to the institution twice weekly for expectant mothers and for women suffering from ailments associated with childbearing. Confinements would (as usual) be attended at the patient's own house by nurses and students residing in or attending at the institution, and one of the senior physicians would supervise this branch of the work, and, where necessary, give advice or assistance. The hospital had for a number of years contained a certain number of beds available for patients suffering from certain antenatal conditions which implied danger to themselves or their infants, but an increase in the present available bed accommodation would be almost immediately necessary.

Subsidiary Centres (Chiefly Curative).

It is recommended that some of the subsidiary centres should be devoted specially to curative treatment, others mainly to preventive work. The institutions necessary for the former purposes included the five dispensaries which were already associated with the Royal Maternity Hospital in so far as their obstetric physicians were concerned, and which, it was hoped, would be similarly grouped with the Royal Hospital for Sick Children in respect of their pediatric physicians, the Deaconess Hospital, the Hospice, the Hospital for Women and Children, Whitehouse Loan (with dispensary in Grove Street), the Royal Victoria Dispensary for Tuberculosis, Colinton Mains Hospital, and the two centres to be established at the lower end of the Canongate and in Gorgie.

Attached to the five associated dispensaries and to the Deaconess Hospital there would be consulting physicians, who, it was hoped, would be recognized as extern assistant physicians to the main centres, giving thus a certain cohesion to the scheme. At each of these six centres there would be two child clinics and two maternity clinics weekly. All expectant mothers, all nursing mothers, and all children under 5 years who might be found by the health visitors suffering from any form of disease or requiring advice of a curative or preventive nature would be at once sent to one of these institutions, where every form of non-infectious malady (skin, ear, eye, nose, throat, teeth) would be treated. Complicated cases requiring special consultative treatment or advice would be sent on to the main centres. One of the official nurses under the scheme would be present at each of the centres during the course of the clinic, and would be able, by subsequently visiting each case at home, to ensure that the advice given was properly carried into effect. A "card system" would be established under which cases found at home in need of medical advice would be passed on to one of these centres, met there by the nurse, and subsequently visited by her at home. Records of the ailments treated would be preserved in the Public Health Department. Obstetric work also would be carried out from these centres, and would be under the immediate supervision of the responsible physician to the institution, assisted by students, nurses, or qualified midwives. About fifteen hundred cases were attended annually from such institutions—persons who were not insured and who therefore received no maternity benefit, and were not in a position to pay for medical attendance. These institutions would supply the necessary medicines free of charge to those unable to pay for them.

Dr. Maxwell Williamson further states that the care of all infants immediately after birth would be relegated to the physicians in charge of the child branch of the work at the various dispensary and hospital centres included under the scheme—the maternity centres being limited in their duty to the care of the mother before, during, and after her confinement. It is doubtful whether the foregoing regulation will meet with general approval; doubtless it is easier for administrative purposes to make the line of separation between the child welfare and maternity work to be birth, but there are practical difficulties of a formidable nature, and the other separation time, weaning, has much to commend it. Maternity hospitals are accustomed to the management of infants, and it seems awkward to have two physicians (obstetric and pediatric) in attendance during the first month at least.

GRANTS.

The Notification of Births (Extension) Act, under which the scheme was framed, contemplated grants in aid, to be paid in respect of: (1) The formation of new clinics (maternity and child); (2) attendance on obstetric cases; (3) the supply of necessary medicines, etc. In addition to these it would be necessary to provide grants for medical attendance at the homes of patients unable to take advantage of the various clinics; this could, of course, have been accomplished by the appointment of several doctors acting directly under the corporation, but it was proposed rather to lay the responsibility of the attendance on outdoor cases (in connexion with each centre) upon the senior physician in charge of the clinics. Although this would involve an additional substantial grant being paid to each, it was certain that the outdoor work would thus be more efficiently carried on, and a continuity established between it and the clinics themselves. At the present time the custom was for students to attend the various dispensaries of the city and to visit the outdoor cases connected with them. Each student was expected to report to the senior physician any serious case to which he was called, and the physician was supposed to visit and advise as to subsequent treatment. But this arrangement was not common in practice, for in the past five years no fewer than 322 deaths had been certified by students. It was proposed under the present scheme to do away with this state of matters; under a financial arrangement with the senior physicians of these centres, each would be responsible for identifying himself with the work of the students attending the centre and personally visiting all the cases which, in his opinion, required such supervision.

(To be continued.)

British Medical Journal.

SATURDAY, JULY 15TH, 1916:

JUTLAND AND THE SOMME.

THE civil medical profession, which has contributed so many of its members to the medical services of the Navy and the Army, may well be proud of the praises those services have won from the Commanders-in-Chief in the battles of Jutland and the Somme. Sir John Jellicoe in his dispatch stated that the work of the medical officers was "entirely admirable and invaluable. Lacking in many cases all the essentials for performing critical operations, and with their staff seriously depleted by casualties, they worked untiringly and with the greatest success." Sir David Beatty speaks of the exceptional skill displayed in face of the fact that in some cases their staff was seriously depleted by casualties and in spite of the inevitable lack of such essentials as adequate light and hot water, in ships shattered by shell fire; conditions, he says, "which tried their skill, resource, and physical endurance to the utmost." Such praise must be a source of immense gratification to the present Director-General of the navy, Sir Arthur May, and his immediate assistants, on whom the heavy work of preparation fell, and also to his predecessor, Sir James Porter, who, not satisfied with paving the way, has gone back to the hard work of his service.

The observations of the new Under Secretary of State for War on the organization of the medical service in and behind the battle of the Somme must have been not less gratifying to the two Director-Generals of the Army Medical Service, Sir Arthur Sloggett, who, as Director-General in France, was responsible for the planning of all the local arrangements, and Sir Alfred Keogh, who, from his office in Whitehall, had the duty of providing from the resources of this country in men and material everything that was requisite for the treatment of the wounded and the swift transport of those who could bear the journey to this country. We are very glad to be able to say that the Commander-in-Chief in France has not been behind Lord Derby in prompt recognition of the excellence of the service rendered by the medical department. Within half a dozen hours of the end of the initial stage of the still continuing battle of the Somme, that is to say, on the fourth day, Sir Douglas Haig caused to be issued a Special Order of the Day, which was addressed from Advanced General Headquarters to the deputy directors of medical services, and by them readdressed to all medical units with instructions that it should be read on parade. The order was in the following terms:

"The Commander-in-Chief directs me to convey to you and through you to the directors and all concerned under them, his high appreciation of their hard work and the efficiency of arrangements for dealing with the medical aspect of the present situation."

This order will be read with great satisfaction by all medical men wherever situated, and must have been specially gratifying to Sir Arthur Sloggett, who, as Director-General in France, was responsible for the planning of the arrangements on the spot and personally supervised their working at the front during the days covered by the order. It will also be read with satisfaction by all those who have friends in France, for it affords ample assurance that no medical means that can relieve the sufferings of the wounded or prevent losses of life are being overlooked.

It seems certain that the proportion of light to serious cases has been unusually large, while even among the more severe the prognosis is regarded as more hopeful than usual. The reason would seem to be that the enemy depended for the most part on machine rifle fire in their endeavours to repel the attack, and rifle bullet wounds, if they do not cause immediate death, tend on the whole to heal more quickly than those caused by high explosive and other shells.

The rate of evacuation from the front to the bases was so considerable that by the end of the fourth day—that is to say, within a few hours of the end of the initial battle—most of the casualty clearing stations and field ambulances seem to have had very few patients left on their hands. The great majority had already been put on the ambulance trains or otherwise safely removed to a distance from the scene of action, and very many of them were in hospitals at home. The staffs of most of the units named had previously been strengthened by sending to them men who for the time being could be spared from their ordinary duties elsewhere. For the most part they were all medical officers who had had previous experience of the same kind of work either as battalion medical officers, field ambulance officers, or members of the staffs of casualty clearing stations. Such previous experience is very desirable, for the work that has to be done at front-line formations during the progress of heavy actions is quite special in its character.

The number of casualty clearing stations distributed within easy reach of the part of the line at which the operations were most active was, we believe, considerably above the usual proportion. As a rule, they were arranged in pairs with the idea of allowing one of the two to have time to deal with the cases already taken in, while the other was open for the admission of fresh cases. They emptied and filled alternately.

This was one strong feature in the arrangements; another was the care taken to provide for the prompt classification of cases. From the fighting line backwards the cases were winnowed and rewinnowed, men being sent to one place or another according as the apparent gravity of their wounds or their general condition seemed to demand. In addition, for instance, to the casualty clearing stations, there were also places to which those who were only very slightly wounded could be sent and receive immediate treatment, as well as medical rest houses, some for officers, some for men, to which could be sent those who were not wounded but only temporarily exhausted by their exertions.

A third strong point was the fact that the medical authorities did not depend for the evacuation of the casualties solely on the ambulance trains. Sometimes they used empty lorries for the evacuation of lighter cases from the field ambulances, and they had also brought up a large number of motor charabancs. There were instances in which the latter carried their loads of sitting-up cases right down to the base hospitals, some of which were established within two hours' drive of the real front. The staffs of these hospitals, in accordance with arrangements made in this country in advance, were strengthened by consulting surgeons who had been holding themselves in readiness at home.

A fourth strong point was the fact that the senior administrative officers, including the Director-General

himself, kept moving round the medical units encouraging the efforts of those engaged in executive work. To this may be added the stimulus of the knowledge not only that this work was appreciated by the men they were treating, but also, as evidenced by the Commander-in-Chief's Special Order of the Day, that its excellence was understood by the high command. Sir Douglas Haig's words will encourage every member of the service to meet all present and future demands upon it in a way to earn similar praise during all the trying times still in front of the army.

BASIS OF CALCULATION OF INCOME TAX.

OUR attention has recently been called to the fact that in one of the northern cities the surveyor of taxes has declined to accept a statement of liability to income tax based on "cash receipts" unless the calculation is modified by adding to or subtracting from the result so obtained the increase or diminution in the amount of debts appearing on the books of the practice at the end of the year. This raises a question of very considerable importance to the medical profession, and although the case referred to appears at present to be an isolated example of misplaced zeal, we propose to discuss the matter in some detail, lest the same objection be taken in other cases and be allowed to stand without challenge.

At the outset we admit freely that there are cases in which the usual basis of "cash receipts" would not be proper or reasonable. For instance, where a practice is purchased from the executors of the previous proprietor on terms which permit them to collect the book debts outstanding at the date of transfer. In such circumstances the cash receipts of the purchaser may be almost *nil* in his first year, and very unsubstantial in his second year. His "income" cannot be fairly measured in terms of the accounts paid without taking into consideration the accounts unpaid, and it is therefore necessary to fall back on some measurement of the value of the fees booked. The reasonableness of this proposition is, we believe, generally admitted, and in such a case as we have suggested the revenue authorities would be justified in an attempt to discard the basis of cash receipts. To a much smaller degree these observations would apply to a rapidly increasing practice, but the converse would also apply to one in which the bookings were falling off—a point to which we shall have to recur.

That the practice of the Inland Revenue, which we contend should be continued, is of long standing, is shown clearly enough by the following quotation from our issue of November 30th, 1912, in reply to a question as to a specific case: "Unless there are very exceptional circumstances in the case, the surveyor's request is a distinct departure from the well recognized practice of dealing with professional accounts on a cash basis." Many new income tax regulations are appearing in statutory form as the existing high rates of duty gradually increase hardships or tempt to evasion, and it is the more desirable that convenient and reasonable methods of calculation which have grown up by tacit consent, and had taken firm root years ago, should be allowed to remain.

Let us consider the question theoretically before turning to its practical side. What does constitute the true sum of the receipts of a practice in a particular year? Clearly that which results from the year's work; but on the other hand those "receipts" which are never actually paid to the practitioner are not true receipts at all, so that the question may be answered by saying that the true amount is the value of the fees booked in the year. *Prima facie* this may seem to be leaning towards the revenue side of the argument, but it is to be noted that such a basis necessarily involves a valuation, more or less arbitrary, of professional book debts, and if there is any form of debt offering a wider margin of error in valuation than an unpaid fee we have yet to discover it. A trader can doubtless prepare his statements by taking his bookings and deducting from these the amount of the debts on his books which are known to be bad, but he can walk with precision in places that give a very uncertain footing to the medical practitioner, whose account may be paid to-morrow, or in several years' time, or not at all.

In its practical working the calculation of the cash receipts has everything to commend it; as was stated in an article which appeared in our issue of April 18th, 1914, it "has the conspicuous advantage that, as no credit is given to the Revenue for outstanding fees, the difficult problem of calculating the value of the 'bad and doubtful debts' is avoided." A medical practitioner does not as a rule prepare a balance sheet at the end of his year, showing therein his total book debts; in most cases it would serve no useful purpose, and he seldom has either the time or the clerical staff necessary for its preparation. On the other hand, the actual amount of fees paid to him during the year is ascertainable with comparative—though not absolute—ease. It is easy where a separate banking account is kept for professional receipts and payments, as, for instance, where two or more practitioners are working under partnership arrangements, and we may perhaps point out that in these circumstances the Revenue officials have a safeguard against errors that would not be found in a computation of total book debts.

A noteworthy feature of a medical practice is the comparative steadiness of the gross receipts—on whatever basis they may be calculated. The gross income of a solicitor varies with the number of conveyances or testaments prepared, and may be suddenly expanded by a lucrative and successful piece of litigation, and the profits of a trader must vary widely with the expansion or depression of trade, but the fluctuations in the fees of a medical practitioner are conscribed within much narrower limits and take place over much more extended periods of time. If this be granted—and it does not seem to be open to serious dispute—it follows that the amount of any one year's cash receipts is very much the same as the true value of the bookings for the same year, the omission of the unpaid accounts of the year being fairly compensated by the inclusion of the payments received for fees earned in previous years. Admittedly the method of dealing with cash only will have a "dragging" effect on the fluctuations of the income from the practice, but the Revenue authorities are as likely to gain as to lose from the additional steadiness thus imparted to the rise or fall, and where the level is steady the results of the two methods must be identical.

In point of fact, in the special circumstance of the moment the Revenue probably gains tax on the "cash basis" method of calculation. Under the provisions of the Finance (No. 2) Act, 1914, a practitioner whose professional income has suffered owing to the war is entitled to base his liability on the average of the year of assessment and the two previous years, instead of on the three previous years as usual, and if he is a member of the naval or military forces of the Crown he is entitled to discard the average altogether and to pay on the actual

year's result. If the calculation of this new liability rests on the basis of the cash receipts it will reflect the previous, and *ex hypothesi* more remunerative, year's work, and will therefore give a result in excess of that which is based on the value of the year's bookings; and we may perhaps add that as the practitioner is always entitled to revert to the three years' average in future years, that excess will be permanent.

We have no desire, and we trust no need, to labour the point further; it must surely be fairly obvious that the innovation which is suggested to us as possibly impending would involve an unreasonable amount of clerical work on the part of a profession already bearing a heavy burden of necessary and responsible labour, and would in the end be of no advantage either to the profession or the Revenue.

RESTRICTING THE SALE OF "MEDICATED" WINES.

IT is becoming a common observation that many reforms, demanded before the war, have been rendered obviously and urgently necessary by the altered conditions due to it. The opposition any proposed legislation for effecting such reforms would have encountered from interested quarters is entirely thwarted by the simple procedure of making an Order in Council under the Defence of the Realm Act and Regulations. Those who foresaw the need for such reforms in the days before the war and endeavoured to secure them are fully entitled to point to what has happened as evidence that their judgement in the matter was sound. An interesting case in point is that of medicated or so-called medicated wines. On page 78 is reproduced the text of an Order which has just been issued by the Central (Liquor) Control Board, forbidding the sale of such wines and some other compounds on "off-licensed" premises unless a clear statement of the amount of proof spirit present appears on the label. We have for many years past frequently pointed out the danger of "meaty" and other so-called "medicated" wines, which are often (as our published analyses have shown) wines containing from 17 to 20 per cent. by volume of alcohol (30 to 35 per cent. of proof spirit). They are advertised as medicines, and there is thus a great danger, which experience shows to be very real, of their being bought and taken by persons who never suspect, or wilfully close their eyes to the fact, that they are essentially ordinary wines with something added; they thus contract the alcohol habit unwittingly. We have pointed out the need for the obvious safeguard of requiring the alcoholic strength to be stated on the label, and it is gratifying to find that such a requirement is now seen by the authorities to be wise. The words of the order contain no definition of "medicated wine," but the term is given a sufficiently wide scope by being applied to "any intoxicating liquor in the form of or prepared as (*a*) medicated wine, or (*b*) any mixture or preparation which contains any drug or medicament or is sold or advertised for sale as containing or purporting to contain medicinal properties." Bona fide medicines are expressly excluded if they are preparations of the *British Pharmacopoeia* or *British Pharmaceutical Codex*, medicines made up to the signed prescription of a medical practitioner, or "medicated or methylated spirits or spirits made up in medicine, and sold by medical practitioners or chemists or druggists." Since practically all the advertised "medicated" wines can only be sold by retailers having a full wine licence, their sale in recent years has been chiefly confined to wine and spirit merchants, grocers, and "off-licence" public-houses; comparatively few pharmacists have found it worth the time and trouble to obtain a licence in order to sell them. It would appear from the wording of the order that a grocer who has been in the habit of selling both "medicated" wines and proprietary medicines may find the sale not only of the former but also of many of the latter now interfered with; if they contain sufficient alcohol to come under the description, "Any intoxicating liquor in the form of medicament, or sold or advertised as containing medicinal properties," they cannot in future be sold on licensed premises (except by a chemist or druggist) unless labelled with their alcoholic strength. It will be interesting to see how far the sales of such wines as those affected by the order will be maintained when the purchaser can see for himself what a strongly alcoholic liquor he is obtaining.

"PHYSIOLOGICAL ABSTRACTS."

WE have received some of the recent numbers of *Physiological Abstracts*, a monthly periodical established by the Physiological Society last April. We heartily recommend it to all readers who wish to keep themselves abreast of the modern progress of physiology; the term "physiological" is used in its wide sense to include important papers in allied sciences which have physiological bearings. Hitherto we have had to rely upon Germany for publications of this nature, and we congratulate the Physiological Society on its initiative in starting a periodical to replace those of alien origin. The society has been fortunate enough to secure the co-operation of physiological societies and journals in all the neutral and allied nations, the list of which is given on the title-page. A large staff of abstractors has been enrolled from among the physiologists, not only of this country, but also from America, Holland, Denmark, Sweden, Norway, Russia, and other lands; we note that the British physiologists include such names as those of Professor Sherrington and Professor Bayliss; among the Americans are Professor Benedict, Professor Macleod, and Dr. Percy Stiles; and from European countries we see Professor Arthus (Switzerland), Professors Babkin and Boldyreff (Russia), Professors Hamburger and Zwaardemaker (Holland), Professor Krogh (Denmark), Professor Dastre (France), Professors Aducco and Fano (Italy), Professor Overton (Sweden), Professor Torup (Norway) among the list of supporters. Cordial messages of good will have been received from the American Physiological Society and kindred societies across the Atlantic, and the Chemical Society in Great Britain and Ireland has promised its co-operation in certain directions. The new venture is starting under most favourable auspices. Professor Halliburton is the responsible editor, and we congratulate him on the prompt way in which he has secured publication of abstracts of the most recently published physiological writings. The last number to hand contains abstracts of no fewer than two hundred and twenty-four papers, and these are culled from sixty-four different journals at home and abroad. At this time when the nations are busying themselves with more important matters this number of physiological papers in a month seems a large output; as one would anticipate, America just now heads the list in the quantity of research work published. When the war is over, we foresee that *Physiological Abstracts* may have a harder time, but we wish our young contemporary every success. Messrs. H. K. Lewis and Co. (136, Gower Street, London, W.C.) are the publishers, and the annual subscription is 25s., post free.

GENERAL GALLIENI'S SANITARY WORK IN MADAGASCAR.

THE military achievements of the late General Gallieni have given him a conspicuous place in the history of the present war. His work as a Colonial Governor, though less spectacular, showed a capacity for understanding and dealing with sanitary problems rarely found in lay administrators. This is well brought out in an

article on his work in Madagascar by Dr. A. Kermorgant, which appears in the *Revue d'Hygiène* for June. Gallieni's first care when he was appointed Governor was to make a survey of the island. He was deeply impressed by the deplorable hygienic conditions in which the natives lived. It was estimated that of every thousand deaths, at least one half were due to preventable diseases, the most common being digestive and respiratory affections, eruptive fevers, paludism, tuberculosis, and venereal diseases. The birth-rate was very low owing to the lack of proper provision for the treatment of parturient women. Gallieni set himself to reform these evils by organizing a system of medical assistance. In 1896 he founded a school of medicine for natives. The first students were unsatisfactory; they had to be taught with the help of interpreters; the idea of dissection was abhorrent to them; they disliked hospital work and considered the dressing of sores as the work of slaves. These prejudices have now to a large extent disappeared. The curriculum extends over five years, at the end of which the degree of doctor of medicine is conferred on candidates who have passed the statutory examinations. Women are trained as midwives, and the native women have learnt to take advantage of maternity institutions; this has had a happy effect on the birth-rate. To increase the population Gallieni adopted legal, fiscal, political and medical measures. The first comprised the regularization of marriages and strict supervision of divorce. The second consisted in exemption of fathers of five children from taxation, exemption from military service of all fathers of families, and a tax on bachelors who did not provide for the maintenance of a child. The political measures consisted in the institution of an annual children's festival, with the distribution of prizes to the mothers of the largest families. The medical measures were the foundation of hospitals, dispensaries, and orphanages in all the provinces. A Pasteur Institute was founded at Antananarivo in 1899 for the production of small-pox vaccine and the treatment of hydrophobia. Lazarettos were established for the internment of lepers. A central pharmacy for the supervision of drugs was established. Systematic efforts were made to educate the natives in sanitary matters by popular literature and lectures. Gallieni sent a communication to the Paris Academy of Medicine, in which he outlined his plan of medical assistance, and asked for advice as to further measures. The Academy expressed approval of what he had done, and made some recommendations as to the repression of alcoholism, paludism, and tuberculosis. Gallieni at once acted on these recommendations, and further issued instructions as to the means of protection to be adopted against plague, cholera, and yellow fever. The result of his activity was that small-pox was almost completely eradicated, paludism was greatly reduced, and both the morbidity and the mortality rates were diminished. To Gallieni belongs the credit of understanding the great part that can be played by the medical profession not only in colonization but in the pacification of new countries. So impressed were the Malagasy by the beneficial work of the French Governor that they called him "Ray Amandreny," meaning "both father and mother." The Academy of Medicine bestowed on him a gold medal, the highest reward in its gift, in recognition of his services to the cause of hygiene.

LIVER ABSCESS IN WOUNDED SOLDIERS DUE TO AN ANAËROBIC ORGANISM.

BUDAY[1] records a remarkable series of cases which occurred in the Red Cross Hospital at the small Hungarian town of Balassagyarmat, near Budapest, last year. The patients all had septic wounds due to projectiles, but there was otherwise nothing of special note: then high fever suddenly set in, and two-thirds of these patients died in ten to fourteen days from the initial rigor with the symptoms of severe sepsis. *Post mortem* the constant lesions found were abscesses of the liver, usually a large number; abscesses in the lungs were also frequent; the other organs were less often affected. The contents of the abscesses were odourless and quite necrotic; the only organisms present were abundant small, Gram-negative bacilli, which stained at the poles, and resembled *B. pestis* in appearance, but all attempts to obtain growths on the surface of various media failed. On making anaërobic cultures in media containing serum and blood, however, growth was obtained at body temperature in a number of instances. The organisms in the culture resembled those in the direct smears from the pus but were sometimes slightly larger, and very large involution forms occurred; they were non-motile and did not form spores; after a few subcultures they died out. Inoculation of rabbits and guinea-pigs with the pus and with pure cultures led to abscess formation. Similar organisms have been described by Veillon and Zuber in appendicitis as *Bacillus fragilis*, by Russ in suppurative periproctitis, and by Ghon in two cases of meningitis of otitic origin, but this appears to be the first observation in cases of liver abscess. The considerable number of cases, 22 in all, occurring at the rate of 2 or 3 a month, with a total turnover of 500 wounded cases in the hospital, raises a number of questions as to the source of infection to which no satisfactory answer has been forthcoming. Buday remarks on the fact that, though the liver was the site of election of the abscesses, pylephlebitis and cholangitis, and also clinical signs pointing to any disturbance of the alimentary canal, were absent, so that there was no evidence of the intestinal origin of the infection. In no case did the patient's wounds present evidence of highly active infection (gangrene or suppurative phlebitis). No cases in other places had come to Buday's notice. The delicacy of the organism made it unlikely that it was a saprophyte in the hospital. Whether it entered the tissues by way of the wounds or from the alimentary canal, where it may be a constant inhabitant, were unsolved problems, but the occurrence of such cases emphasizes the fact that there are still serious gaps in our knowledge regarding the group of pyogenic organisms.

[1] *Centralbl. f. Bakt.*, 1916, vol. lxxvii, p. 453.

LONGEVITY IN THE INDIAN MEDICAL SERVICE.

THE life of Surgeon-Major H. B. Hinton, of which some account is given in another column, takes us back a long time. It covered the last two years of the Napoleonic wars, and extended almost to the end of the first two years of this new world war. On the occasion of his centenary in 1913 he received the congratulations of the Council of the Royal College of Surgeons. Three years earlier it had congratulated Mr. Edgar Jones, of Great Burstead, Essex, who had taken the diploma of M.R.C.S. in 1834, on the attainment of the age of one hundred years; Mr. Jones died in 1912, so that Surgeon-Major Hinton, at the time of his death, must have been not only the oldest medical officer and the oldest officer on the retired list, but also the oldest member of the Royal College of Surgeons of England; probably he was the oldest member of the profession anywhere. He was serving in India when the first Afghan war began, though he himself did not take part in that war. He was the last survivor of the officers of the Indian Medical Service who served in the two Sikh wars, and there can be few, if any, officers or men now living who took part in those campaigns, the first of which was fought over seventy years ago. Hinton was the third retired officer of the Bengal Medical Service who has topped the century during the last twenty years. The first was John Bowron, who was born in February, 1799, entered the Subordinate Medical Department as a medical pupil on July 1st, 1813, was promoted assistant surgeon on December 20th, 1825, retired on December 31st,

1851, and died at Hove on March 5th, 1899, having just completed his century. The second was Thomas Lambert Hinton, who was born on May 1st, 1808, joined the service on January 30th, 1842, resigned, less than four years later, on October 24th, 1845, and died at St. Leonards on June 14th, 1908, six weeks after completing his hundredth year. He only spent a few years in India, but Bowron and H. B. Hinton put in nearly forty and thirty years' service respectively, under conditions of life infinitely more trying than those which now prevail. The two Hintons, although namesakes and contemporaries, were not related. H. B. Hinton had been the senior officer on the retired list of the Indian Medical Service for nearly twelve years. His predecessor in that position was Surgeon Francis Thompson, who was born on November 2nd, 1808, commissioned on April 18th, 1833, retired on July 14th, 1856, and died on August 22nd, 1904. The senior officer now living appears to be Surgeon-General Thomas Barkly Beatty, who was born on November 4th, 1827, entered the Bombay Medical Service on May 20th, 1851, and retired, after being head of that service for five years, on March 31st, 1885. Surgeon-General Sir Alexander Christison, Bt., who is five months junior to and nearly a year younger than Beatty, is now the senior Bengal officer.

INSTRUCTION IN SEXUAL HYGIENE IN GIRLS' SCHOOLS.

AT a meeting of head mistresses, held on July 7th at the Royal Society of Medicine, the recommendations of the Royal Commission on Venereal Diseases were discussed, with special reference to the education in sexual hygiene of children and adolescents. Mrs. Creighton took the chair, and Dr. Mary Scharlieb in the course of an opening address pointed out that from a consideration of the evidence laid before the Commission, together with its conclusions and recommendations, it was evident that there was a consensus of opinion that all classes of the community need instruction in this matter of national importance. With regard to children it was felt, in the first instance, that parents were the right and natural instructors, but inasmuch as unfortunately the great majority of parents are neither able nor willing to give the necessary instruction, that duty, like so many others, was delegated to teachers. It was felt that instruction of children in sexual hygiene and physiology should not be attempted in class, but that head masters and mistresses should make a point of interviewing pupils about to leave elementary and preparatory schools, and that they should also offer warning and guidance to any child who appeared to be in special need of such assistance. It was further evident that before adolescents of both sexes took up the work of life, whether as undergraduates going to a university, or boys entering commerce or factories, workshops and other callings, it was absolutely necessary that the head master of the school, or some one representing him, sometimes the school medical officer, or a clergyman, should endeavour tactfully and sympathetically to give such guidance as would help the young man to avoid immorality and its fatal consequences. It was pointed out that girls also were in need of sympathetic and tactful help, and that this was so was emphasized by the fact that the heaviest percentage of illegitimacy was found amongst the children of young servant girls. The meeting was well attended, and there was subsequently a brisk discussion. Most of the head mistresses present agreed that, failing the mothers, it was their duty to help the children under their care. Some of them felt that this duty was difficult of performance, and before the close of the meeting there was a general request for further instruction. This has been given at the house of the Royal Society of Medicine this week, and will be repeated on September 6th, 7th, and 8th, at 3 p.m. All women teachers are invited to attend.

REPORTS OF FACTORY SURGEONS.

THE Home Secretary has lost no time in giving effect to the recommendation of the Retrenchment Committee that the reports of certifying factory surgeons on accidents, which cost £12,500 a year, should be dispensed with. The Committee on Accidents and Factories recommended that legislation should be obtained to enable this to be done on the ground that they were now of little value and entailed in all serious cases a duplication of reports made by the inspectors. The clause in the Government omnibus bill, called the Police, etc. (Miscellaneous Provisions), Bill, to carry out this recommendation encountered a good deal of opposition, not only on the part of the certifying factory surgeons, but also from the representatives of labour in the House. The Home Secretary so far bent to this opposition as to introduce an amendment having the air of a compromise. This did not altogether still the opposition, but the clause as amended was carried by a substantial majority, though in a very small House. As it now stands the clause is a combination of the proposals contained in the Factory Bill of 1901 and the Accidents (Mines and Factories) Bill of 1905, which were not proceeded with owing to the strong opposition they excited. The clause now carried continues the duty of the certifying surgeon to investigate and report upon cases of injury by exposure to gases, fumes, or other noxious substances. Beyond this its main effect is to give the Home Secretary power to schedule any classes of accidents which must be investigated by certifying surgeons, and to give instructions as to the qualifying points which would justify a district inspector in referring any other accidents for investigation and report. In view of the very strongly expressed views of the Home Secretary it does not seem probable that this second part of the proviso will be of much effect. It seems unlikely that the Home Office will make regulations requiring the factory surgeon to investigate any classes of machinery accidents in the future unless very strong pressure is brought to bear. Such pressure could most effectually be exerted by the trade unions, but the clause was opposed by the National Society for the Prevention of Cruelty to Children and the National Union of Teachers, as well as by the Association of Certifying Factory Surgeons and the British Medical Association.

IN DIRTY DOGDOM.

THE French Council of Hygiene devoted the greater part of its last session to the consideration of the public dangers associated with the inordinate keeping of dogs and the insufficient control exercised over them. In the first place, the Council, having discussed at length the fact that there had been a recrudescence of rabies during the last few months, determined to require that the measures authorized for holding the disease in check should be most strictly applied. Next, Professor Raphaël Blanchard undertook to prepare a report on the dangers of the dissemination of hydatid diseases by dogs and the preventive means which should be taken. Finally, the Council adopted a resolution urging that the regulations with regard to the municipal taxes on dogs should be vigorously applied. At about the same time the Medical Committee of the British Science Guild was adopting a resolution condemning the pollution of the streets of London and of most cities and big towns by dogs, and suggesting to the Government and municipalities that the evil might be reduced by increasing the tax on dogs and enforcing by-laws. The committee considers that in towns the tax on one dog should be doubled, and a large progressive increase imposed on each additional dog. The proposal will probably have the cordial support of the majority of retail traders, who daily suffer loss owing to the primitive habits of the little darlings that women drag about with them; they contribute to the fouling of the streets and pavements, but in this respect the big dogs are of course worse, and they

always seem altogether out of place in towns. We suspect that the most important parts of the resolutions of both bodies are those advising more thorough enforcement of the licensing regulations. Whether the Inland Revenue has tightened up its administration lately we do not know, but undoubtedly there used to be a large number of dogs running about in small towns and villages for which no licence had been taken out.

Medical Notes in Parliament.

Local Government Board.

THE vote for the Local Government Board was taken on July 11th. In moving it Mr. Long spoke of the enormous amount of work that had been placed on the shoulders of local authorities, and expressed his appreciation of the devotion, the spirit, and the ability with which they had applied themselves to it. The normal work of the Local Government Board had been greatly reduced by dropping much routine work and various statistical returns. Loans, excepting for war purposes or very urgent public health matters, had been stopped altogether. The Poor Law authorities had freely placed their workhouse buildings at the disposal of the War Office; some had been used as barracks, and others for hospitals, in which 40,000 beds had been made available. Accommodation had also been provided by the local authorities for infectious diseases among soldiers. One half of the medical staff of the Board had been engaged upon war work, chiefly the visiting of camps and billets, and the inspection of food, both here and abroad. It was in large measure due to their efforts that it had been possible to maintain so high a standard in the food provided to the army. At the beginning enormous numbers of men were collected in various areas, where there was all too often very insufficient accommodation, no sanitary arrangements, and none of the provisions necessary to defend the health of the community. The precautions taken had been followed by a steady decrease in enteric fever and in cerebro-spinal disease; small-pox, which at one time caused some alarm, had been satisfactorily dealt with, and this result was largely due to the prompt action taken by the officers of the medical department of the Board to secure among other things that three million tubes of lymph manufactured by the Board on the latest principles were supplied to the War Office. The response of local authorities to the appeal to institute schemes for the welfare of infants and mothers had been satisfactory. The amount of the grants last year to local authorities, equal to half the cost, was £42,000. Local authorities and voluntary associations were generally co-operating well, and no fewer than 900 health visitors had been appointed. Some of the local authorities had been able to provide nursing as required by the Notification of Measles Order, and the London scheme had been a notable contribution to the work. A grant of £50,000 had been made, and would be increased if needed.

Speaking as one with a quarter of a century's experience in various departments, he said that he had noticed during the last ten or twelve years a tendency for departments to take up work which really belonged to other departments, so that there were two views taken as to what ought to be done, and two inspectors visiting the same house. This duplication led to weakness in administration. He declined to deal with the relation of the heads of the Board of Education to the health of school children, but contended that the Board of Education existed for education and the Local Government Board to care for public health. There was overlapping, not because officials did their work improperly, but because Parliament for years had been passing Acts throwing similar duties upon different departments; this led to unsatisfactory administration, and in many cases to great waste of money.

He paid a tribute to the work of the Royal Commission on Venereal Diseases, whose recommendations it had been possible to a very large extent to adopt. An Order was about to be issued imposing upon local authorities the duty of organizing measures by which facilities in connexion with existing institutions, such as large hospitals, should be provided. The local authorities were called upon to provide (1) laboratory facilities for free diagnosis, (2) clinics at the large hospitals, (3) gratuitous supply of salvarsan. Some of those responsible for the hospitals entertained a fear that the reputation of a hospital would be injured by importing venereal cases into it. That this was not the case was shown by the experience of a London hospital. The State grant would be 75 per cent. of the cost, and in return he asked the hospitals not to consider it essential that the patient using a hospital should belong to the particular district the hospital served. With regard to ordinary medical work, he said that, although there was a considerable shortage of medical men, there were no fewer than 290 sanatoriums and hospitals, providing 11,743 beds for tuberculosis; in addition, 359 dispensaries had been approved, and there was sufficient accommodation for all present demands. All soldiers and sailors discharged on account of tuberculosis could be provided for in these institutions. Special arrangements for the treatment of officers had been made with King Edward's Sanatorium at Midhurst.

The demands upon the staff and upon the medical men of the country had been excessive in consequence of the war, and in many cases had thrown an immense burden of work upon medical men, but it had been possible to prevent normal work in connexion with public health falling behind, though no new fields of enterprise other than those he had mentioned had been entered.

He desired, he said, to pay a special tribute to the doctors in town and country. New legislation had thrown upon them an enormous burden of work. Very many doctors had been taken for the R.A.M.C., and this naturally and necessarily diminished the number available for the work at home. "Cheerfully and bravely have these men done it. Let any one examine the diary of their day's work, and see what it is now for a country doctor or a doctor in one of our great towns. Hours and hours do they labour, and when they come home there is a great deal of writing work to be done in the making up of the returns. There is no complaining and no grumbling. They are doing it with all the will in the world, and I think the nation owes a special debt of gratitude to these men who are labouring in order that we and the rest of the population might be sustained in good health. To them I desire to pay a special tribute, because I believe of all the civil professions there is none which has played so great a part in war time as these men have who are doing so much at this moment."

Mr. Long's statement had a very sympathetic reception, Mr. Crooks going so far as to suggest that the name of the Board should be changed to the Good Samaritan Department. Much of the discussion which followed was concerned with the work of local tribunals.

Welfare Schemes for Factories and Workshops.

Clause 7 of the Government's omnibus bill, called the Police, etc. (Miscellaneous Provisions), Bill, contains a clause enabling the Home Secretary to require an employer to make provision for securing for the workers such conveniences as arrangements for preparing, heating, and taking meals, a supply of drinking water, facilities for washing, accommodation for clothing, and ambulance and first-aid arrangements. The memorandum on the bill pointed out that in recent years welfare arrangements had been introduced by many employers, and that since the outbreak of war the arrangements had been extended on account of the increase in the employment of women and girls. Special care was taken to ensure health and well-being, to maintain discipline and order, especially where women worked with men, and to prevent individuals suffering undue fatigue or strain. The Munitions Act required such provisions to be made, and a special department of the Ministry had been constituted to deal with the subject so far as munition workers were concerned, but there was no power to deal directly with other industries. The clause was opposed on the ground that one of its provisions proposed that workers concerned should be associated in the management of the arrangements in any case where a portion of the cost was contributed by them. The opposition was due to a suspicion that the effect would be contrary to the object of the Truck Acts. The Home Secretary repudiated any such intention, but undertook to reconsider the clause, and on

July 10th brought up an amendment designed to meet this point. It was opposed, but finally adopted without a division, and the bill was read a third time and passed.

Reports of Factory Surgeons.

In accordance with an undertaking given on the second reading the Home Secretary, on July 6th, moved to amend Clause 8 of the Police, etc. (Miscellaneous Provisions), Bill, by inserting a proviso to retain the reports of certifying factory surgeons in cases not due to accident caused by negligence, but to exposure to fumes or other noxious substances. The clause as finally adopted, with the amendment, was as follows:

8. *Abolition of Investigations of Accidents by Certifying Surgeons.*—(1) After the expiration of one month from the passing of this Act it shall cease to be the duty of certifying surgeons to investigate the nature and cause of death or injury caused by accidents in factories and workshops or in premises to which the provisions of the Factory and Workshop Acts, 1901 to 1911, relating to accidents, are applied, or to send to the inspector of the district reports thereof:

Provided that nothing in this section shall affect subsection (3) of section seventy-three of the Factory and Workshop Act, 1901, relating to the investigation by certifying surgeons of diseases occurring in factories and workshops.

Provided also that it shall continue to be the duty of the certifying surgeon to investigate and report upon cases of injury caused by exposure to gas, fumes, or other noxious substances or due to any other special cause specified in instructions of the Secretary of State as requiring investigation, and the Secretary of State shall issue instructions defining the causes of injury to which this provision is to apply and requiring the inspector of the district to refer to the certifying surgeon all such cases reported to him. It shall also be the duty of the certifying surgeon to investigate and report upon any case of injury which the inspector of the district in pursuance of any general or special instructions of the Secretary of State may refer to him for that purpose. The certifying surgeon shall have, for the purpose of the investigation in any such case, the same powers and shall be entitled to receive the same fee as he would if the case had been a case to which section seventy-three applies.

The sentence in the second proviso assigning to the certifying surgeon the duty of investigating and reporting upon any case of injury which the inspector of the district in pursuance of any general or special instructions of the Secretary of State may refer to him, was introduced by Mr. Samuel, after protests from Sir Philip Magnus, Mr. T. Wilson, Sir R. Finlay, and other members. Mr. Denniss afterwards urged the rejection of the whole clause on the ground that it left the operators at the mercy entirely of the employers. Mr. Acland, after reminding the House that he had been chairman of the Committee on Accidents in Factories, said that that Committee was unanimous in recommending the abolition of the reports of certifying surgeons. Mr. Walsh opposed the clause very strongly, especially at the present moment, when there was a growing and urgent necessity for more careful provision, and he marvelled that at this time when one-third of the factory inspectors had gone, and when dangerous employments were increasing in a degree never known before, this particular economy should be brought forward. Mr. A. Williams and Mr. Wardle followed on the same side, and Mr. Whitehouse maintained that the clause did not carry out the recommendations of the Committee over which Mr. Acland had presided. Eventually the clause as printed above was carried on a division by 55 to 23.

Anthrax.—A question was asked by Mr. Thorne on July 10th with reference to an inquest held at Southwark on June 29th, with regard to the death of a waterside labourer from cutaneous anthrax contracted while handling infected Persian or China wool in bales. Mr. Brace stated, in reply, that the danger of anthrax arising through the handling of wool bales at wharves and warehouses had recently come into prominence, and the question of the steps to be taken to protect persons employed in such premises was under the consideration of the department. It was proposed to ask the Departmental Committee now considering the question of anthrax in the wool industry to make an inquiry into this subject also. Meanwhile, arrangements were being made for a circular to be issued to the occupiers of such premises, calling attention to the danger and recommending the adoption of certain precautionary measures which would include the posting and exhibition of a picture placard. In reply to a further question—with reference to another inquest—the President of the Local Government Board said that the question of issuing an order making all cases of anthrax compulsorily notifiable was under consideration.

Purchasing Power of the Sovereign.—The Parliamentary Secretary to the Board of Trade stated on July 11th that the average percentage increase in cost of food, clothing, etc. (including rent), was estimated to have been 16 per cent. between March, 1914, and March, 1915, and 33 per cent. between March, 1914, and March, 1916; in other words, it would have required a sovereign in March, 1916, to purchase an amount of the above commodities which would have cost 17s. 3d. in March, 1915, or 15s. in March, 1914. Mr. Hogge suggested that this meant that an old age pension was now worth only 3s. 9d. a week.

War.

British Prisoners in Germany.—A White Paper has been issued containing a further report from Dr. A. E. Taylor, dated May 24th, in which he states that since his last visit to Ruhleben "a considerable reduction has been made in the amount of foodstuffs allotted to the camp" and that the diet is now below that of military prisoners in other camps. On July 11th Lord Robert Cecil stated that a note had been received from the German Government in reply to that from the British Government urging that if Germany could not feed her prisoners they should be released. The German note denied that insufficient food was being given to the prisoners, and, while rejecting the British proposal as to exchange, made another on the subject. The British Government was considering its reply, which, together with the German note, would be communicated to the House as soon as possible. In the meantime a further report on the conditions at Ruhleben had been asked for.

Masseurs.—On July 6th Mr. Tyson Wilson asked whether members of the National Association of Trained Masseurs had applied for appointment as masseurs in military hospitals, but that although their qualifications were as good as those of persons who had been appointed, their applications had been refused. He wished to know why the War Office refused to make use of these fully trained masseurs. Mr. Tennant replied that appointments of masseurs in military hospitals were made without reference to the institute or association to which the individual applicant might happen to belong. They were selected by an advisory committee consisting of masseurs, matrons, and medical men. Certain qualifications had been laid down which candidates must possess before appointment. Each candidate was reported on individually and no candidate was rejected if possessed of the necessary qualifications. In response to a further observation by Mr. Wilson to the effect that forty members of the association mentioned who had applied for appointment were all refused, Mr. Tennant said that he would make inquiries.

Director of Medical Services, India.—Colonel Yate, on July 11th, asked from what dates prior to June, 1915, Surgeon-General W. Babtie was absent from his appointment as Director of Medical Services in India; where he was employed during that time; and who was the officer responsible in regard to the medical provision for the expedition to Mesopotamia during his absence. Mr. Chamberlain's written answer was as follows: "Surgeon-General Babtie left India for Egypt on February 6th and returned on March 19th. He was deputed to Egypt, at the instance of the War Office, to report on the Indian medical arrangements there. During his absence the routine duties of the office were carried on by the Deputy Director of Medical Services. The Government of India report that the latter dealt with no questions of policy."

Royal Army Medical Corps.—Mr. Watt, on July 3rd, asked whether time-expired men of the R.A.M.C., on offering themselves for re-enlistment, were being told that they could not be reinstated in that corps, and were being relegated to rifle battalions. Mr. Tennant said that it would be in accordance with the principle frequently urged in the House that young single men in the R.A.M.C. fit for general service should be transferred to the infantry to make way for older married men who would rightly be given a preference, as regards service, in a service less exposed to danger. Such transfers would not, of course, be made, if they involved dislocation of the service from which the transfer was made.

German and Austrian Medical Practitioners.—On July 5th Mr. G. Faber asked how many German and Austrian medical practitioners, naturalized and enemy aliens respectively, were at present in this country; and whether any, and, if so, how many, of either class were interned. The Home Secretary replied that the information was not available, and could not be obtained without very great labour. The number of German and Austrian medical practitioners left in this country was, he said, small, as there was an arrangement for mutual repatriation at the beginning of the war.

Haslar Naval Hospital.—In reply to Mr. Gwynne, who on July 10th asked a question which seemed to suggest that adequate provision was not made for the comfort of convalescents at the Royal Naval Hospital, Haslar, the Parliamentary Secretary to the Admiralty said that there were two large smoking sheds, and six large colonnades, where, as well as in the airing grounds, smoking was permitted. It was not permitted in the wards. The patients were allowed to sit and lie on the grass in the grounds, and for them were available easy chairs, folding chairs of cane and canvas, ordinary bath chairs, Merlin chairs, spinal carriages as required, as well as numerous ordinary iron garden seats and forms at intervals throughout the grounds. Entertainments were given on five afternoons each week in the Erroll Hall.

THE WAR.

THE WOUNDED FROM THE SOMME.

EVEN during the first stage of the battle of the Somme—which stage, it seems to be reckoned, ended on Tuesday, July 4th—nearly all the chief military hospitals and many of the smaller in this country had begun to receive the wounded; indeed, in some instances, men were in hospital in London within twenty-four hours of being wounded. The reason for this rapid evacuation was, of course, that the fighting had only begun and that it was essential, in view of the possibilities of the immediate future, to empty the casualty hospitals quickly, and to keep as many beds as possible free in the base hospitals in France.

As to the success of the medical arrangements there is no doubt whatever. They are very comprehensive in character, planned on a large scale, and well thought out in detail. Furthermore, the various teams of M.O.'s and nurses and men had been well tuned up in advance and jumped splendidly into collar directly the call came, which it did like a wave from the foremost line backwards. Consequently the work, however strenuous, went on smoothly and rapidly. The moral of the men is splendid. This remark applies not only to the men who have been wounded and those in action, but also to men in the even more trying period of waiting. At plenty of places troops whose turns for action had not arrived volunteered to help with the carrying work at the casualty clearing stations and the like.

Some idea of the way in which the work was done may be gathered from the following extracts from a private letter received from a medical officer with the British army in France:

I was in Albert on the opening day of the battle, and after that was caught up in a whirlwind of work. Between Saturday night, or rather Sunday morning, and Tuesday noon I was giving anaesthetics and doing surgical assistance (splinting, etc.), with very short intermissions for grub and a doze. The front line medical formations were very busy for a time. The bases, too, were busy, and still are, but the wave of work reached them later. It is only at the bases on these occasions that there is commonly any opportunity for the finer kinds of surgery. At the front the most that can usually be done is to see that the wounds are well cleaned, freely opened and drained, hopelessly damaged tissues cut away, and fractures splinted in such fashion as to prevent movement while travelling. There are also cases in which it may be doubtful whether or no a limb should be removed, but a few hours' delay usually settles it; if not, there are the surgical consultants available, both near the front and at the bases, where they have been reinforced temporarily during the week. At the bases the new arrivals will divide the consulting work with the consultants already stationed there. They will deal with cases which are either recoverable within three weeks or are not fit for shipment for the present. Though all the bases are busy, none are overcrowded. The busiest are those from which shipments of early cases take place, since treatment and evacuation have to proceed side by side.

Casualties showing multiple wounds seem to have been common, and it was clear in many cases that the wounds could not all have been caused by one and the same missile.

The casualties include many cases of penetrating wound of the chest, as also many of wound of the neck and face, but wounds of the head seem to have been relatively uncommon. It is to be remembered, of course, that all the men engaged in the operations were wearing helmets.

But although so many of the cases were light, and relatively clean, gas gangrene does not seem to have been altogether lacking. It was found in some patients on their first arrival at the field ambulances, but in these instances the patients seem to have been men who had fallen in places whence they could not be collected for many hours after they were wounded.

On Tuesday afternoon, July 4th, the temperature suddenly fell many degrees, and shortly afterwards torrential rain commenced and continued for some hours. Had this change in the weather occurred earlier, it would have made much difference in the chances of recovery of many wounded men; but fortunately by this time a pause in the movement had commenced, and the sufferers in the great advance had all been collected and placed under cover. Casualties, of course, still continued to occur, but their rate and number had fallen more or less to those of ordinary trench warfare. The exposure of casualties to wet seems to tend to increase the degree of infection of wounds, intensifies shock, and often leads to the superaddition of chest troubles.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Killed in Action.

CAPTAIN HUBERT COWELL MULKERN, R.A.M.C., was killed in action on July 1st, aged 34. He was educated at the Godolphin School, Hammersmith, and at St. Mary's Hospital, and, after taking the M.R.C.S. and L.R.C.P.Lond. in 1906, went into practice at Kingston-on-Thames. After acting as medical officer at the military hospital at Kingston Barracks, he took a temporary commission as lieutenant in the R.A.M.C. in December, 1914, and was promoted to captain on completion of a year's service. After serving for some time with the Northumberland Fusiliers he was attached to the Royal Inniskilling Fusiliers and was with that regiment when killed.

Captain Arnold Bannatyne Tough, L.D.S., of the East Lancashire Regiment, was killed in the recent advance in France in the beginning of July. He was the second surviving son of Dr. W. R. Tough, of Parkside, Accrington, and was 26 years old. He was educated at the Victoria University, Manchester, where he took the diploma of L.D.S. in 1911, and before the war was in practice as a dentist at Accrington. At the beginning of the war he joined the 11th Service Battalion of the East Lancashire Regiment, became lieutenant on September 17th, 1914, and was promoted to captain on May 5th, 1915.

Lieutenant Douglas Rodger, R.A.M.C., was killed in action on July 1st, aged 33. He was the younger son of Mr. Rodger, of West Kirby, late of Cheetham Hill, Manchester, and of Hale, Cheshire, and was educated at Trent College, at Edinburgh, and at Manchester, where he graduated as M.B. and Ch.B. of the Victoria University in 1907, also taking the F.R.C.S.Edin. in 1912. After acting as house-surgeon of the Royal Eye Hospital, Manchester, he went to Australia as ophthalmic inspector of schools in Queensland. He took a temporary commission as lieutenant in the R.A.M.C. last September, and was working in an advanced dressing station when killed.

Second Lieutenant Charles Foote Snow, L.D.S., Royal Field Artillery, was killed in action on June 30th, aged 28. He was the elder son of Mr. W. H. Snow, of Westgate, Peterborough, and was educated at the Cathedral School, Peterborough, at Barton School, Wisbech, and at Guy's Hospital, taking the dental diploma of the Royal College of Surgeons, England, in 1910. After qualifying he went out to South Africa, and settled in practice as a dentist at Kimberley. He held a commission in the Diamond Fields Horse, and at the beginning of the war was posted as senior lieutenant of the 1st Battalion of the Kimberley Regiment, and soon after promoted to captain. He was then transferred to the South African Medical Corps as a captain, and as such served through the campaign in German South-West Africa. Coming home in October last, he got a commission as second lieutenant in the R.F.A. on October 21st, and went to the front on May 1st.

Died of Wounds.

Lieutenant Ernest Charles Lambert, R.A.M.C., who was reported as wounded in the casualty list published on July 1st, was stated, in the list of July 7th, to have died of wounds. He was educated at Westminster Hospital, and took the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1898, also the M.D.Brussels in 1903. He had filled the post of assistant medical officer at the Banstead, Darenth, and Hanwell asylums successively, and at the beginning of the war was assistant medical officer of Wandsworth workhouse. He took a temporary commission as lieutenant in the R.A.M.C. in November, 1915, and was attached to the East Surrey Regiment.

Died on Service.

Captain N. J. Hofmeyr, South African Medical Corps.

Missing—Believed Killed.

Captain J. L. Green, R.A.M.C.(T.F.).

Wounded.

Captain J. H. Glover, R.A.M.C. (temporary).
Captain A. Hamilton, R.A.M.C.(T.F.).
Captain P. H. MacDonald, R.A.M.C. (temporary).
Captain W. K. A. Richards, R.A.M.C. (temporary).
Captain W. T. Smith, R.A.M.C. (temporary).
Captain J. H. Tomlinson, R.A.M.C. (temporary).
Lieutenant A. C. Taylor, R.A.M.C. (temporary).

Prisoners of War.

Brevet Lieutenant-Colonel S. Anderson and Captain F. H. Salisbury, both of the I.M.S., who were previously reported as among the prisoners who surrendered at Kut, are now officially stated not to be prisoners.

DEATHS AMONG SONS OF MEDICAL MEN.

Beddow, Victor, Second Lieutenant Devonshire Regiment, second son of Dr. Josiah Beddow of Thorverton, Exeter, aged 20, was killed in action on July 1st. He received his commission in March, 1915.

Dalby, Herbert Charles, Second Lieutenant York and Lancaster Regiment, eldest son of Major Dalby, R.A.M.C., of the Rosary, St. Mary Church, Torquay, killed in action on July 1st, aged 29. He got his commission on May 1st, 1915.

Davis, Wilfred J., Captain Northumberland Fusiliers, second son of the late Robert Davis, M.D., of Derrickwood, Orpington, killed in action on June 30th. He was educated at Harrow and at Clare College, Cambridge, got his first commission on August 22nd, 1914, and was promoted to Captain on April 29th, 1915, after the second battle of Ypres.

Farrow, Brian, Second Lieutenant Lancashire Fusiliers, son of Dr. Farrow, of Upper Chorlton Road, Manchester, now serving in the R.A.M.C., killed in action on July 2nd. He enlisted in the Public Schools Battalion at the beginning of the war, and got a commission a year later.

MacBryan, E. C., Second Lieutenant Prince Albert's Somerset Light Infantry, son of Dr. H. C. MacBryan, of Kingstown House, Box, Wiltshire, killed in the recent advance in France. He was a well known Rugby football player. Two of his brothers are also serving, Lieutenant R. A. MacBryan, K.O.S.B., who has been wounded, and Captain J. C. W. MacBryan, who is a prisoner of war.

Sweetnam, Rodney S., Captain Royal Field Artillery, only child of Deputy Inspector General Sweetnam, R.N., of Ballyshannon, Worthing, killed in action on July 1st, aged 24. He came home from the Malay States at the beginning of the war, and joined the Inns of Court O.T.C., got a commission in the R.F.A. in January, 1915, went to the front in May, and was promoted to captain in April, 1916. He lost his life trying to rescue a wounded infantry officer.

Traill, Kenneth R., Lieutenant Berkshire Regiment, younger son of Dr. Traill, of Cooralee, Sunningdale, Berkshire, killed in action on July 1st, aged 22. He was educated at Bradfield College, matriculated at London University, and entered Guy's Hospital as a medical student in 1911. At the beginning of the war he joined the Inns of Court O.T.C., got his commission in September, 1914, and was promoted to Lieutenant in December. He was previously wounded last February, and rejoined his battalion in March.

Twining, R. W., Second Lieutenant Devon Regiment, only son of Dr. Twining, of Salcombe, South Devon, killed in action on July 1st.

Vaisey, Charles Thomas Hinton, Second Lieutenant Royal Flying Corps, eldest son of Dr. Vaisey, of Winslow, Buckinghamshire, died on June 30th of wounds received while flying over the German lines the day before. He was educated at Trent College, and was sheep-farming in Australia when the war began.

White, J. V., Captain Manchester Regiment, elder son of Dr. White, of Park Road, Southport, killed in action on July 1st. His commission as lieutenant was dated January 1st, 1915.

MEDICAL STUDENTS.

Davidson, William Adrian, Second Lieutenant Gordon Highlanders, aged 21, the eldest son of Mr. Alexander Davidson, solicitor, of Aberdeen, died of wounds received in France on July 2nd. He was engaged in medical studies at the University of Aberdeen prior to obtaining a commission in the Gordon Highlanders.

MacKinnon, Lachlan, Lieutenant Cameron Highlanders, aged 25, killed in action, was the third son of Mr. Duncan MacKinnon of Tobermory, and previous to obtaining his commission was a medical student at Edinburgh University.

NOTES.

ROYAL NAVY.

Battle of Jutland.

THE dispatch of Admiral Sir John Jellicoe, Commander-in-Chief of the Grand Fleet, reporting the action in the North Sea on May 31st, was issued on the evening of July 6th. Appended to it is a report by Sir David Beatty. Sir John Jellicoe's dispatch contains the following reference to the medical service:

The work of the medical officers of the fleet, carried out very largely under the most difficult conditions, was entirely admirable and invaluable. Lacking in many cases all the essentials for performing critical operations, and with their staff seriously depleted by casualties, they worked untiringly and with the greatest success. To them we owe a deep debt of gratitude.

Sir David Beatty's report also contains a tribute to the medical service in the following terms:

Exceptional skill was displayed by the medical officers of the fleet. They performed operations and tended the wounded under conditions of extreme difficulty. In some cases their staff was seriously depleted by casualties, and the inevitable lack of such essentials as adequate light, hot water, etc., in ships damaged by shell fire, tried their skill, resource, and physical endurance to the utmost.

In concluding his dispatch Sir John Jellicoe says that he intends to bring to notice in a separate dispatch the names of officers and men, all of whom did not come under his personal observation, but who had the opportunity of specially distinguishing themselves.

THE ARMY.

Battle of the Somme.

One of the first acts of the Earl of Derby on taking office as Under Secretary for War was to give an interview to the London representative of the *Brooklyn Eagle*. In the opening passage he said that the British offensive on the western front, marked by extreme gallantry of action and buoyancy of spirit, was proceeding in logical accordance with the British policy of wearing down the enemy. An advance along twenty miles of difficult country, defended by immense masses of enemy troops, equipped with every deadly device known to modern warfare, could not effect a sudden collapse of resistance to our attacks. British preparations were complete to the last detail. The supply of munitions, resulting from months of strenuous nation-wide endeavour, adequately met the demands of unprecedented bombardment; the organization of our supply services was arranged to serve any emergency, and the co-ordination of each department of the army seemed to have been perfect. As an instance of the excellence of British organization, he took the medical service.

"The battle of the Somme," he said, "has emphatically demonstrated British organization to be markedly superior, in one very important respect, to that of the German forces. Our hospital arrangements have been superb. I do not believe the work of the Royal Army Medical Corps has been surpassed in any battle we have ever fought. Our soldiers are wounded one morning at the front in France; twenty-four hours later they are receiving expert medical attention in London hospitals. Such a feat has not often been paralleled; I think it may be taken as fair indication of the efficiency of the new British armies that wounded men may be rapidly transported along roads and railways carrying large quantities of munitions, food, and medical supplies towards the fighting lines. The new steel helmet, I might suggest, has completely vindicated its adoption. I have heard unofficially that minor casualties in our advance have been considerably reduced by this device; in fact, minor head wounds are now rare.

"Any advance like that now undertaken by the British army entails certain necessary casualties, but our losses have not been unduly large. It must be remembered that every soldier who passes through a dressing station, no matter how slight his wound or how quickly he returns to the front, figures as a casualty. A considerable percentage of our so-called losses have, therefore, been merely slightly wounded men. The method of the British advance is calculated to secure a permanent military advance for every serious casualty; we are not wasting men by sporadic tactics, but we are demanding the full price for every British life lost and for every foot of France we regain. Do not suppose that because our advance is slow it is not sure; it is because our advance is sure that it is slow."

MENTIONED IN DISPATCHES.

The *London Gazette* of July 4th publishes a dispatch by General Sir Beauchamp Duff, Commander-in-Chief in India, dated March 9th, dealing with the various minor operations in different parts of the frontiers of India from the beginning of the war up to date. These comprise several operations near and round Aden, including an attempt by the Turks to seize the island of Perim on June 15th, 1915, in the Gulf of Oman, in the Tochi Valley and Derajat, in the Mohmand, Buner, and Swat country, and in the Kachin hills in Burma. Among the officers specially mentioned are the following members of the medical services:

Aden.

Lieutenant-Colonel L. F. Smith, R.A.M.C.; Major T. B. Kelly, I.M.S.; Captain F. R. Coppinger, R.A.M.C.; Lieutenant J. S. Townley, R.A.M.C.(T.F.), Assistant Surgeon E. H. Gillson, I.S.M.D.; and Drs. Macrae and Young, of the Keith Falconer Mission.

Mohmands, Swat, and Buner.

Lieutenant-Colonels B. R. Chatterton, I.M.S., and R. J. W. Mawhinny, R.A.M.C.; Majors G. E. Cathcart, R.A.M.C., J. K. S. Fleming, I.M.S., and G. F. Rugg, R.A.M.C.; Captain J. Cunningham, I.M.S.; Assistant Surgeons E. V. Duckworth and A. N. Quick, I.S.M.D.; and Nursing Sisters Miss Ethel Green, Miss A. R. I. Lowe, and Miss M. A. Stronghill, of Queen Alexandra's Military Nursing Service for India.

Volunteer Decoration.

The *London Gazette* of July 7th announces the bestowal of the Volunteer Officers' Decoration, under the Royal Warrant of July 25th, 1892, on Surgeon-Major W. Richardson of the Isle of Man Volunteers and on Surgeon-Major E. Harvey of the Bermuda Volunteer Rifle Corps.

The Freemasons' War Hospital, London.

The Masonic Nursing Home Committee have secured the old premises of the Chelsea Hospital for Women in the Fulham Road, the new building, which was opened by Her Majesty Queen Mary on Tuesday last, being situated in Arthur Street, between the Fulham and King's Roads. The old premises are to be taken immediately for two years at a moderate rental, with the option of purchasing the freehold at a reasonable price; they have been offered to the War Office through the British Red Cross Society for use as a military hospital during the continuance of the war and such further time as may be desirable. This offer has been accepted, and the hospital will be of Class A, and fully equipped on the most up to-date lines. It will provide from fifty to sixty beds. The medical advisory committee is now asking for the services of a resident medical officer. In order to maintain the Freemasons' War Hospital a large sum must at once be raised through the interest and generosity of the brethren.

England and Wales.

The London County Council has decided to bring the Streatham Institution for Mental Defectives into use with the least possible delay, and to appoint a woman to be chief resident officer or superintendent. It has been recognized also that it is desirable that the local authority should accept responsibility under the Act for destitute mentally defective children on their discharge from industrial schools at the age of 16, so that they might be sent to institutions for defectives, instead of, as at present, being discharged to the care of boards of guardians; but as sufficient accommodation is not at present available the present practice of discharge to the guardians must be continued for the time being.

The South London Hospital for Women, which is situated at the southernmost point of Clapham Common, was opened by the Queen last week. It is staffed entirely by women; it will provide paying wards. It has an isolation ward on its very high roof, a special ward for children, and an operating theatre and *x*-ray department, the latter as yet unequipped. The hospital is, indeed, far from being finished, as regards furnishing at least. This week Her Majesty also opened the new building of the Chelsea Hospital for Women. It will contain eighty beds, and will provide accommodation for paying patients.

The Universities and the War.

The effect of the war on the Manchester University was very forcibly brought home in the speech of the Vice-Chancellor, Sir Henry Miers, at the degree ceremony last week. Men, he said, had been swept away as by a whirlwind. During the past year they had lost 30 teachers and 160 students. The number of men students had fallen to 620, as compared with the normal number of about 1 250, and he hardly thought the number would exceed 375 in the coming year. Among those who had left, 5 teachers and 90 students had met death. Practically every department of the university was now co-operating in war work, every scientific department being engaged in testing or investigation work in connexion with war needs. Many of the professors were serving on Government committees, and as a result more and more of the work had fallen on the women. The financial strain on the university had been very great. The sum of £5,000 out of the special Government grant to teaching institutions fell far short of the need, but he saw little probability of any further assistance from the Government this year. The Arts Building would cost £40,000, and there were practically no funds to meet this cost. Appeals had been made for funds for the establishment of a Chair in Russian, and £1,000 had been promised, though something like £15,000 would be required. At the beginning of the session the students numbered 1,165, the medical department having 260 students, including 67 women. Among the bequests to the university during the year were mentioned £5,000 from Mr. Sam Gamble for assisting women medical students, gifts from Mrs. and Miss Beckwith of Southport for the foundation of scholarships in mechanical engineering, £1,000 from the late Mr. J. F. Cheetham for endowment purposes, a second £1,000 from Mrs. S. A. Lees for Ashburne Hall, and an anonymous gift of £50 for women medical students.

The Vice-Chancellor, Dr. M. E. Sadler, who presided on degree day, said that nearly 1,400 of those associated with the University of Leeds were on active service, and 51 had received military distinctions. In accordance with a recent instruction of the Army Council the Officers' Training Corps was to be extended. By an order of the Board of Education, full-time students would not for the present be required to join the colours before the end of the term at which they attained the age of 18. Though the university, after the war, might have to pass through a period of financial embarrassment, its future was bright. The universities, old and new, would have immensely increased responsibilities and greatly enlarged opportunities of public service; they would doubtless receive in due time far larger subsidies from public funds. Universities were institutions with close territorial ties but of national standing. In order that they might do their duty to the nation, the empire, and to the populous districts in which many of them were set, they must continue to work in intimate co-operation with the great local authorities and with the Government, but they should never forget that the living power of their work would depend upon their continuing free from mistaken kinds of external control, however well meant. Sensitive as the universities should be to the many claims upon their service, they should also remain self-governing and free. Germany had failed, in spite of her brilliant endowment of knowledge, to keep unsullied in her universities freedom of moral judgement in respect of some vital questions of duty to the State and to mankind. The reason was that, having realized the political value of higher education to the State, she had gradually and half-consciously undermined, by subtle pressure of State control and by inducements of official distinctions, independence of moral and political judgement in some of the teachers through whom that higher education was given. The inner freedom of university life, the right (always to be used with self-restraint and with consideration for the standpoint of others) to think and to teach what study, reflection, and conviction led teachers to hold true, was the secret of the strength of a university in doing its duty to the community and the world, and should at any cost, be defended and preserved.

At the degree day of the University of Sheffield, when not a few of those who received degrees were wearing khaki, the Vice-Chancellor, in the course of his address, said that the Roll of Service of the University contained 780 names, sixty-nine belonging to the staff. Lieutenant D. M. Pitchford, who was present to receive the degree of B.A., had, the Vice-Chancellor said, received the French Croix de Guerre for his valour in Gallipoli, while ten students of the university and Mr. Lightfoot, the Sorby Research Fellow, had been awarded the British Military Cross. The Junior Pro-Chancellor, Colonel Stephenson, and Colonel Clifford, another member of the council, thirteen students, and two members of the staff had been mentioned in dispatches; one student was a prisoner of war, twenty-eight had been wounded, and twenty-four students and two members of the staff had been killed. It would, he said, never be forgotten how graduates and undergraduates of British universities streamed off to the war. Whatever criticism might be brought against our educational system, it would be the wildest paradox, in the face of this great and notorious fact, to deny that it had at least produced valour, courage, a lively sense of moral issues and devotion to duty in every class of the community. All the departments of the university had been affected by the war; the scientific department was doing important work for the Government. Though it was the custom to take the virtues of the medical profession for granted, he desired to express his admiring acknowledgement of the manner in which the members of the medical faculty in Sheffield had

met the great strain and stress of work which the war had brought them. The strain was felt not only in the hospitals, but in the laboratories of the university. A new department in glass technology had been established, a sum of £2,000 had been voted to the scheme by the two Yorkshire glass associations, and ordinances had been adopted for a diploma in glass technology. While German would always remain an essential acquisition for students who intended to progress far in literary, scientific, or technological directions, it would henceforward have an important rival in the Russian language, and recently a great Sheffield firm had endowed a lectureship in Russian. When the university was first founded some of the endowments came from the slender purses of Sheffield working men, and now through a great endowment, due to the liberality of the late Mr. Edgar Allen, the university would be enabled to open its doors to the sons of men earning weekly wages.

Physical Education.

At a meeting of the Royal Sanitary Institute, held on July 7th at the Municipal School of Technology, Manchester, a discussion was opened on the necessity for a national scheme of physical education by Major R. Tait Mackenzie, R.A.M.C., professor of physical education at the University of Pennsylvania, who is now spending a year's leave of absence in this country and is doing good work at the convalescent camp at Heaton Park, where some remarkable results are being obtained in the treatment of men with stiff joints caused by injuries in the war. He began by calling attention to the remarkable and almost daily physical improvement following on the course of gymnastic exercises to which recruits are first submitted on joining the army, and expressed his conviction that after the taste of active outdoor life many of the men would never again reconcile themselves to office and factory life, but would feel an irresistible call to the more untrammelled life of the colonies. He dwelt on the advantages to be gained by a proper supervision of children's playgrounds by trained and tactful men and women; city life weighed specially on children, and playgrounds for them ought not to be more than half a mile apart. Plots of ground of two to ten acres should be provided with a gymnasium, baths, and possibly a running track, and in all cases a supervisor with administrative offices should be provided. For girls he recommended group games rather than public competitions. For all school children who did not care for ordinary games there should be a compulsory course of gymnastics, and for those ready to take exercises a progressive course of gymnastics and athletics should be arranged. On the other hand, the excessive devotion of others to the playfield should be tempered by making a rigid standard of scholarship a necessary condition for membership of a team or eligibility for competitions. He advocated the establishment at universities and at certain schools and colleges of courses of instruction in physical education to prepare teachers who might take places of equal dignity with the rest of the teaching staff. For this purpose diplomas or certificates should be awarded which would be recognized by educational bodies throughout the country.

Scotland.

THE Merchants' House of Glasgow has offered to provide funds from the Buchanan and Ewing bequests for the payment of university lecturers in electrical therapeutics at the Royal and Western Infirmaries.

The Mid and East Lothian miners have followed the example of the Fife miners by deciding to double their contributions to the Edinburgh Royal Infirmary for the next six months. Formerly they gave 1d. a fortnight; from July 1st to the end of December they will give 1d. a week.

At the closing meeting for the session of the Royal Society of Edinburgh a number of British honorary Fellows were elected. Among them were Dr. J. N. Langley, professor of physiology, and Dr. Alexander Macalister, professor of anatomy, respectively in the University of Cambridge. The following foreign honorary Fellows from allied or neutral nations were also elected: Professor M. E. Gley (Paris), Professor Golgi (Rome), General W. C. Gorgas (U.S. Army Medical Department), and Professor Grassi (Rome).

The recommendation of the Senatus Academicus of the University of Edinburgh to the University Court, that the classes in the faculty of medicine should in future be open to women, was discussed by the Court on July 10th and agreed to in principle. The matter was referred to a committee which is to report to the ordinary meeting of the Court on July 24th.

Edenhall Hostel for Maimed Men.

The Princess Louise Scottish Hospital for Limbless Sailors and Soldiers at Erskine, near Glasgow, in the West of Scotland, is well known, and contributions on its behalf had on July 5th almost reached the large sum of £100,000; but Edenhall Hostel, between Kelso and Coldstream, although less in the eye of the public, was able some weeks ago to celebrate the first anniversary of its opening (in June, 1915) by issuing a leaflet telling in a most interesting and readable way of the work which had been accomplished in it. Like the institution in the west, it caters for limbless sailors and soldiers, supplying and fitting them with artificial limbs under instructions from the Chelsea Commissioners; it has already dealt with 127 patients, of whom 24 were arm cases, 86 were leg cases, and 17 were convalescent; and it is at present full, with many waiting for admittance. H.M. Queen Alexandra is its patroness, and it numbers among its patrons Lord Reay, K.T., Lieutenant-Colonel the Lord Billing, C.B., the Earl of Haddington, K.T., the Lord Polwarth, the Lord Provost of Edinburgh, the Duke of Roxburgh, K.T., and the Earl of Home, K.T. Its chairman is Admiral of the Fleet Sir William May, G.C.B., who preceded Sir John Jellicoe; and on the committee are Mr. James Scott and Dr. George Henderson of Coldstream. The treasurer is Mrs. Douglas, Mansefield, Coldstream, and the hostel has for secretary the Lady Issobel Douglas Home. With the exception of two women and the orderly the staff is composed entirely of voluntary members of the Coldstream Red Cross Detachment, with Mrs. George Henderson (lady superintendent of the detachment) as sister-in-charge. Patients have come to the hostel from the 3rd Northern General Hospital, Sheffield, the 1st Northern General Hospital, Newcastle, the 2nd Scottish General Hospital, the Bangour War Hospital, the D.L.I. Dépôt, Newcastle, the 1st and 4th Western General Hospitals, the Lanarkshire Red Cross Dépôt, the Soldiers' and Sailors' Association, and the Leicester War Hospital; its sphere of usefulness has therefore been a very wide one. It is a sure guarantee that the 110 men who were fitted with artificial limbs were well served when it is stated that the consulting surgeon is Lieutenant-Colonel Charles W. Cathcart of Edinburgh; the limbs come from Messrs. Scotland and Co., Glasgow, and the fitting of them is cared for by Mr. Carr, that firm's manager. It is estimated that in usual cases the men can leave, fitted with arm or leg, in six weeks, although, of course, a longer residence is needed for some. But for the shortage of skilled artificial limb makers, due to so many being away on army service, the output of artificial limbs would have been greater. Some of the patients help with the limb making (says the booklet referred to), some are busy carpentering, carving, etc., and what with work, measuring, fitting, and exercise, the workshop is the busiest, brightest, and most interesting part of the hostel. The hostel, originated by the Countess of Home, was started (financially) on voluntary lines, and funds were forthcoming, so that now some twenty-six beds are endowed. The pamphlet goes on to say, "It was the first institution for limbless men started in Scotland. . . it can claim to have filled the first need for limbless men next to Roehampton, and therefore benefited first by the support of the public. Lately it has been made an auxiliary Red Cross Hospital, Class B. There can be no doubt that its situation (in view of the Cheviots), its staff, and its furnishing are all well fitted to restore maimed men to health and usefulness again."

THE New York City Board of Health has appointed a medical adviser to whom those who have, or think they have, venereal disease may apply for counsel. His functions are purely advisory and educational; all cases requiring treatment are referred to a private doctor or to a clinic.

Correspondence.

THE USE OF BONE GRAFTS.

SIR,—In the last paragraph of Colonel Robert Jones's paper in the BRITISH MEDICAL JOURNAL of July 1st he advises a long period of waiting before resorting to bone grafting, but the military considerations do not favour any such delay in the case of the private soldier, and the alternative of discharging him to seek cure in civil life is disadvantageous both for the State and the soldier.

I quite agree that good union will take place in a wonderful manner, and to a hitherto unsuspected degree, after gunshot wounds of long bones, even when some three or four inches have been blown to smithereens; yet we are now getting returned for advice and treatment a lamentable number of pensioners with large fragments of bone missing, and there is every reason to fear that this number must enormously increase if the doctrine of a well-known London operator is adhered to, in which he advocates the removal of all loose bone fragments in the early treatment of these cases. To my mind this is most pernicious, and exactly opposite to what I have every reason to believe, from the last twenty-two months' experience, to be sound surgical practice.

Of the principles underlying bone grafting, the following seem to me of chief importance. I claim no credit for any originality in setting them forth, but having put them to the practical test of my own work, I know that they must be adhered to if success is to be ensured.

The graft must be autogenous, and while composed largely of compact tissue for stability, should, for ensuring a fair degree of osteogenesis, consist partly of cancellous bone. I have seen nothing in my own cases which leads me to ascribe any virtue to periosteum attached to the graft, except in so far as it limits the circumferential spread of bone cells which otherwise form an annoying mass of new bone. The graft must not be subjected to either stress or strain, otherwise it will tend to be absorbed, and, most important of all, it and the bone defect which it is intended to bridge must be *absolutely immobilized*. I am glad to find that Colonel Jones agrees with this last point, but while he insists upon it he gives us no help in letting us into the secret of the method by which he has attained immobilization after the grafting of these bone defects from gunshot injuries.

The chief disaster which has to be feared, and which in my own work has several times led to failure, is the lighting up of the original infection; it would appear, therefore, that fixation by plaster, even if this is admitted to ensure perfect immobilization, is out of court for the first few weeks after operation.

The other method of external fixation by means of splints does not completely satisfy our requirements, so one has to fall back on methods of internal fixation, and at present, in spite of the obvious risk, I see no alternative to screws with or without the support of Lane's plates. Colonel Robert Jones has given me no assistance in this difficulty beyond what is conveyed by Fig. 2, B and C. In the former the graft is fixed with catgut, surely inadequately, and in C with two nails, again inadequately, and obviously they should be no less suspect than the plates and screws which he condemns.

I would dissent from two opinions which Colonel Jones holds connected with the treatment of simple fractures of civil practice. I quite agree that the common spiral fracture of the lower third of the tibia often needs operative treatment, but I entirely fail to be convinced that all that is necessary is the interposition of a bone graft "to lock the fragments" so as to "prevent rotation." A large percentage of my fracture operations have been on this class of case, and, while I have not found rotation a difficult factor to deal with, the tendencies of the lower fragment to fall backwards and of sliding to recur unless fixation is absolute, are such ever-present difficulties, and can be so completely overcome by a long plate fixed with at least three screws in each fragment, that I am loath to rely on the support of an unaided graft, which surely can attain the essential requirement of perfect immobilization to a far less certain degree; it must be borne in mind that in nearly all cases of this type the opposite side of the parallelogram—the fibula—is also broken at a higher level.

Colonel Robert Jones writes: "Experienced surgeons know that they (plates and screws) produce actual delay in true and efficient osseous union of the fracture." This statement has often been made by others;[1] those who make it should support it by evidence, and owing (as I am glad to have the opportunity of admitting) much to the practical writings of Colonel Jones on bone surgery, I cannot think he would repeat it without abundant personal evidence. I can only say that from a constant and most intimate acquaintance with the work of the introducer of plates during the last eleven years, and from a smaller personal experience of my own, I can only recall one case in which union of a fracture could be even suspected of being delayed after plating; but in saying this I make one proviso: My statement does not apply to any plated fractures which were originally or became later infected. I can well believe, and in fact would suspect, that in a septic plated bone rarefying osteitis would lead to delayed union, but I submit this is no less a travesty of what always happens in a clean plated fracture than the statement which appears in a well-known many-volumed treatise on operative surgery, that screws in a few hours lose the binding power of their threads, and then become mere pegs.—I am, etc.,

C. H. FAGGE,
Lieutenant-Colonel R.A.M.C.

London, W., July 6th.

JEJUNOSTOMY AND JEJUNO-COLOSTOMY.

SIR,—In my papers dealing with paralytic ileus[2] I have considered only one form of this condition—namely, that which results from definite peritonitis, usually of appendical origin, either confined to the pelvis or spreading thence into the upper regions of the abdomen. I am grateful to Mr. R. P. Rowlands for his letter on May 20th, in which this point was clearly made on my behalf. It seemed unnecessary after that letter to labour the point further, but Mr. H. T. Hicks's paper in your issue of July 1st shows that it needs further emphasis.

It is evident that there is no greater resemblance between (*a*) intestinal paralysis resulting from the extension of severe peritonitis to the muscular coat of certain segments of the bowel, and (*b*) general paralytic ileus following severe abdominal operations and unaccompanied by clear evidence of peritonitis (Bonney) than there is between typhus and typhoid fever. The arguments of Mr. Bonney and Mr. Hicks may be perfectly valid with regard to condition (*b*). Upon this point I am not prepared to offer an opinion.

In regard to condition (*a*), which lies, mainly at all events, outside the scope of gynaecological experience, my arguments remain untouched by observations derived from cases of condition (*b*). Mr. Hicks's criticism of my work is irrelevant because it confuses two conditions which are not alike.

I hope that Mr. R. P. Rowlands may yet be persuaded in cases of condition (*a*) to abandon enterostomy for ileo-colostomy (or jejuno-colostomy) with caecostomy. Even when enterostomy is done by the improved technique which Mr. Rowlands suggests, I believe that the balance of advantage is against it. It is true that lateral anastomosis takes rather longer, but even patients who are extremely ill stand it very well, and without appreciable shock. It is unnecessary to say that, before the anastomosis is made, all the viscera except the two coils to be anastomosed must be returned to the abdominal cavity, that the abdominal wall must be kept warm with hot towels, and that the patient must not be "soaked" with anaesthetic, nor allowed to become cyanosed. If these precautions be observed, the operation is almost "shockless." Of course, in patients so gravely ill, any operation involving exposure of and traction on or removal of large areas of the bowel would be out of the question. But if these evils are avoided, the mere sewing together of two coils of intestine need not strain the vital powers.

As soon as the patient leaves the table—and I have never lost a case during operation—all the advantages during convalescence rest with lateral anastomosis as opposed to enterostomy. It seems to me that the persistent loss of fluid entailed by an enterostomy must surely make its mark in the death-rate of a series of cases.

[1] See Frank: *Surgery, Gynaecology, and Obstetrics*. December, 1915.
[2] *British Journal of Surgery*, No. 10, 1915; BRITISH MEDICAL JOURNAL, April 8th, 1916.

Mr. Rowlands suggests that jejuno-colostomy may be attended by unpleasant sequelae. My patient during convalescence had occasional fluid actions of the bowels after taking food, but these have ceased and she has gained weight since the operation.—I am, etc.,

London, W., July 4th. W. SAMPSON HANDLEY.

GARLIC IN WHOOPING-COUGH.

SIR,—The interesting communication on "Garlic in whooping-cough" by Mr. T. Mark Hovell (JOURNAL, July 1st, p. 15) set me referring to my notes of past practice, for it was my custom to employ that remedy extensively in the treatment of that disease many years ago. I find in those memoranda an extract from a paper contributed to the BRITISH MEDICAL JOURNAL, vol. ii, 1878, p. 864, by the late Sir Richard Quain on diseases of the bronchial glands, the statement that:

In this affection (whooping-cough) enlargement of these glands has so frequently been observed by Dr. Guéneau de Mussy that he believes this disease to be an exanthem of the bronchial mucous membrane, and that this local disease leads to enlargement of the glands which, again by pressure on the pneumogastric and recurrent nerves, gives rise to some of the special phenomena of the disease, such as crowing cough, and even to the vomiting frequently observed in this disease. It is right to observe here that the late Dr. Hugh Ley speaks interrogatively in his work on laryngismus stridulus of enlarged bronchial glands being capable of producing a cough like whooping-cough; and he further alludes to some cases of whooping-cough in which the glands by the side of the trachea were enlarging. He asks, "May it not be that an enlargement of these glands from a specific animal poison, similar to that of the parotid gland in mumps, is, after all, the cause of whooping-cough?" In a note of mine below this quotation I have written: "This theory may explain the good effects produced by the use of liniments (such as tinct. opii, tinct. lythe āā ʒij, spt. ammon. fort. ʒiij, lin. camph. co. ad ʒij, or garlic (which is almost a specific) stewed down in olive oil and rubbed into the back and chest."

While writing about drugs which are "almost specifics," I would like to say that if guaiacum is given in the early stage of tonsillitis it may be said to possess this character. I used it extensively in this connexion, giving it in the form of mistura guaiaci, and with admirable results.—I am, etc.,

Tunbridge Wells, July 3rd. H. A. LATIMER, M.D.

SIR,—Garlic has an even wider range of usefulness than Dr. Hovell has suggested in the therapy of chest complaints. For the last three years I have been using the fluid extract of the drug as an inhalation in pulmonary tuberculosis, and am absolutely certain that its action is as beneficial and much less irritating than a dilute solution of formaline, which I had formerly used for this purpose. Tuberculosis of the joints can also be treated successfully by garlic juice applied on a piece of white lint and covered with gutta percha tissue to keep it moist. Those who would like further information may consult the book of Dr. Minchin, of Dublin, entitled *Allyl Sulphide in the Treatment of Lupus and Tuberculosis* (1912).

Dr. Hovell states that unless two pairs of stockings are worn the pressure produced by walking on the thin slices of garlic is apt to produce irritation. In my opinion the irritation is produced by the garlic itself. When the fluid extract is applied to a tuberculous joint it frequently produces profuse vesication, so much so that treatment has sometimes to be suspended until this has passed away. Dr. Minchin, however, states that in those cases in which vesication is produced, the progress towards recovery is always more rapid than in those in which no irritation of the skin occurs.—I am, etc.,

JOHN BAIN, M.B.,
Temporary Lieutenant, R.A.M.C.

Horton Camp, Cremlington, July 2nd.

The Services.

INDIAN MEDICAL SERVICE.

Appointment of Selection Committee.

IT was recently announced in the press that after the open competitive examination held last July for admission to the Indian Medical Service no similar examination would be held during the continuance of the war, but that such appointments as might be required to meet the absolutely indispensable needs of the service would be made by nomination by the Secretary of State. To assist him in making these appointments, which, as already announced, will be limited in number to the absolutely indispensable needs of the service, Mr. Chamberlain has appointed a Selection Committee, who will summon and interview such applicants as may appear to be *prima facie* suitable, and make recommendations for appointment.

Applications for appointment should be addressed to the Secretary of the Military Department, India Office, Whitehall, S.W., and should contain concise particulars of the applicant's medical degrees and career. Applicants must be over 21 and under 32 years of age at the time of application. Particulars regarding pay, promotion, etc., in the service can be obtained from the Secretary, Military Department.

EXCHANGE.

MAJOR R.A.M.C.(T.), attached to a Field Ambulance, Salonika Force, desires exchange with officer on field ambulance or other front line unit or C.C.S. abroad.—Address No. 2700, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Obituary.

WALTER W. H. TATE, M.D.LOND., F.R.C.P.,

OBSTETRIC PHYSICIAN AND LECTURER ON DISEASES OF WOMEN, ST. THOMAS'S HOSPITAL.

WE deeply regret to have to record the death of Dr. Walter Tate, which occurred on July 5th, at his residence in Queen Anne Street. He was born in London in 1865, the son of Dr. George Tate, who practised in North London. Dr. Walter Tate received his education at University College School, and studied medicine at University College, which he entered as a student in 1884, and its hospital, where he worked in the wards as clerk to Dr. Sydney Ringer and Vivian Poore, and dresser to Sir Rickman Godlee and Mr. Marcus Beck. In 1888 he gained the diplomas of M.R.C.S. and L.R.C.P., and took the degree of M.B.Lond. in 1891 and that of M.D. in 1893. In 1888 Dr. Tate held the appointment of obstetric assistant in the hospital, and was afterwards successively house-physician to Dr. Frederick Roberts, house-surgeon to Mr. Christopher Heath, and lastly resident medical officer in the hospital. In 1889 he distinguished himself by winning the Atkinson-Morley surgical scholarship. The diploma of F.R.C.P. was conferred upon him in 1903. In March, 1893, Dr. Tate was appointed physician to out-patients at the Samaritan Free Hospital for Women, London, an appointment which he filled for seven years. After holding a temporary appointment at St. Thomas's Hospital he was elected assistant obstetric physician on May 13th, 1896, and full obstetric physician on November 20th, 1901. Dr. Tate was an able gynaecologist, and an excellent colleague, equally popular at the Samaritan Hospital and at St. Thomas's. He became a member of the Obstetrical Society of London in 1892, but it was not until 1897 that he began to take an active part in its discussions. In that year he read a paper on pyometra complicating cancer of the cervix uteri; it was founded on the fact that he had observed retention of pus in the uterine cavity in no fewer than three out of twenty-eight cases of cervical cancer. It gave rise to an active discussion, in the course of which some stress was laid on the extensive induration due not to malignant but to inflammatory deposit, characteristic of pyometra associated with cancer of the cervix, an appearance liable to mislead the observer. In 1904 he read another paper before the same society on intestinal obstruction following operations for fibroid tumour of the uterus—a condition he had encountered thrice in 150 supravaginal hysterectomies. It was an argument in favour of panhysterectomy in preference to the supravaginal operation in the majority of cases. After the establishment of the Royal Society of Medicine in 1907 Dr. Tate took an active part in the meetings of the Section of Obstetrics and Gynaecology, and at the last annual meeting was unanimously elected president of the Section for 1916–17, but death has removed him before he had even the opportunity of inaugurating his presidency. Dr. Tate was an excellent teacher, and from 1906 to 1910 was examiner in midwifery and diseases of women to the Conjoint Board.

The funeral service was held at St. Andrew's Church,

Wells Street, on Saturday, July 8th, and the interment took place afterwards at Highgate Cemetery.

Dr. J. S. FAIRBAIRN, assistant obstetric physician to St. Thomas's Hospital, sends the following appreciation: Nowhere will the death of Walter Tate, at the zenith of his powers, be more deeply felt and regretted than among his hospital colleagues and the St. Thomas's students. It is just over twenty-three years since he came from University College to take up the duties of a new post, then established for the first time—that of Obstetric Tutor and Registrar.

For the four years during which he held this office he did duty during Dr. Cullingworth's holidays, and gradually came to take an increasingly active share in the ward work, so that when Dr. Cory resigned in 1896 and he was definitely appointed to the staff, the only difference was that he gave up his tutorial classes and began regular clinical teaching in the out-patient department. Five years later he became full physician, Dr. Cullingworth retaining charge of a quarter of the beds for three years.

Tall, spare, and almost frail-looking, Tate did not give an impression of strength or endurance, yet he was capable of long and strenuous work, and to those who knew what he did he seemed almost incapable of fatigue. His gentleness and quietness of manner, too, covered a strong, self-reliant character. Much of his success was due to his confidence in himself, his quick decision and action. By his clinical clerks, house officers, and those practitioners who called in his aid—all of them in a position to form a critical judgement—his skill in forming sound and accurate diagnoses was acknowledged, so that it is not remarkable that the opinion of his hospital colleagues and students spread further afield and brought him an extensive consulting practice. He was a brilliant operator, and was never seen to greater advantage than in some surgical case presenting unexpected difficulties. But to these, what may be termed professional qualities, were added personal characteristics which were equally responsible for Tate's success in practice. He was extraordinarily thoughtful and gentle with his patients, and had a way of communicating to them his own confidence in his power to help them. They seemed to be constantly in his mind, hospital or private, serious or trifling, and whether the patients were gravely ill or merely suffering from minor discomforts that worried them, he would visit them or run in and see what a few cheery words could do. Even when away on a much-needed holiday he did not forget the comfort a letter or telegram, or even a hurried visit to town, would bring. Indeed, no effort on his part was too much if it brought the slightest help to those under his care. Those who worked with him at the hospital know how closely he kept in touch with his patients. There was no question of his duty to them being over with an operation performed; the after-care of his cases was never left to house officers and nurses. He was generous to a fault, and among the poor women who have been helped back to health by him there will be many sore hearts and much mourning over his death. He loved doing kindly and charitable things to the distressed and disabled women coming under his care, and doing them so that truly his left hand knew not what his right hand did. As a teacher Tate chiefly attracted those who could learn by watching and following his methods. To serve under him was an education in itself. Pathology did not appeal to him, his interest lay almost entirely in clinical work and practice, in gynaecology rather than midwifery. He took an active part in the work of the medical school. He was lecturer in midwifery for over ten years, and on diseases of women up to the time of his last illness. He was a member of the school council, and always took a lively interest in the amalgamated clubs. He was president of the athletic club, and a constant visitor at all cup ties, athletic meetings, and at smoking concerts, at which latter he was at one time a frequent and welcome performer. Many of his former students and house officers will have pleasant memories of evenings spent at his house, where he loved to make those who could or would take a part in song or at the piano, for Tate was a great music lover and had a good voice, which always seemed at its best on those evenings in his own house. He used to describe himself as a real Cockney in his enjoyment of an evening out in London, and was an inveterate theatre-goer. His chief outdoor relaxations were motoring and archery.

On those who knew Tate intimately his lovable character and great personal charm made a lasting impression, and his memory will be cherished by all who came in touch with him.

A CENTENARIAN INDIAN MEDICAL OFFICER.

SURGEON-MAJOR HENRY BENJAMIN HINTON, late of the Honourable East India Company's Bengal Army, died at Adelaide, South Australia, on May 14th, aged 103. He was born on March 7th, 1813, the son of Benjamin Hudson Hinton, cashier in the Portsmouth Bank, and took the diploma of M.R.C.S. in 1835; after making two voyages in an East Indiaman, he entered the Bengal Medical Service as assistant surgeon on January 14th, 1839. He became surgeon on December 31st, 1852, surgeon-major on January 14th, 1859, and retired on March 7th, 1868. His war services comprise the Gwalior war of 1843–44; the first Sikh war or Sutlej campaign of 1845–46, when he was present at the battles of Aliwal, Badiwal, and Sobraon (medal and clasp); the second Sikh war or Punjab campaign of 1848–49, when he served in the dépôt hospital at Firozpur, and was present at the battle of Gujrat (medal and clasp); and the second China war of 1858–60.

An account of his long life, illustrated by a portrait, was published in the BRITISH MEDICAL JOURNAL on March 15th, 1913, when he became a centenarian, and it is interesting to remember that when, in 1866, a medical board at Calcutta allowed him furlough on sick leave for two years, it was the general feeling that he would never reach Melbourne; he returned, however, to India much improved in health, and left that country in 1867; finally, on May 7th, 1868, he was rather reluctantly granted his pension; this amounted to £456 per annum, and in addition there was £300 a year from the Bengal Medical Fund. These allowances he drew for forty-eight years.

Dr. LENDON of Adelaide, who knew him well during the later years of his life, writes:

When in his 99th year Dr. Hinton sustained an intracapsular fracture of the head of the left femur, and after this was unable to walk and could only manage to shift himself from his bed to a chair. Although I had made his acquaintance some thirty odd years ago it was only during the last five years that I had really known him well from constant attendance upon him in the private hospital. From the time of his accident he had the usual indications of "surgical kidney," but his final illness only lasted a couple of weeks and his intelligence was preserved till near the end; a few days before death he inquired for the latest news of Verdun. He attributed his longevity partly to heredity and partly to his abstinence; he was a non-smoker, practically a teetotaler, and a very small eater. He had one strange habit: he always slept with his head covered with blanket and sheet. He abhorred cold weather and loved his sunny clime, though it was strange to hear an old Anglo-Indian sometimes complaining of our summer heat. His sedentary life allowed him to indulge to the full his bent for literature. In this respect he was voracious and omnivorous; magazine and newspaper, novel or biography, nothing came amiss. His only attempt at writing is now lying on my table; it is an autobiography written in 1887 and dealing with his life up to the time of his departure from India. This was offered, but refused, by several London magazines, to his great disappointment; though exceedingly interesting, it is not in its present state suitable for publication; it requires judicious editing, and some day this may be done. His writing illustrates a common defect—the failure to see the wood for the trees. Whilst history was being made in India on a large scale, he was more concerned with recording petty squabbles with his superiors, in which he never came out on top, and cantonment scandals and their consequences, which had better have been forgotten.

As an old man he was at his best when he allowed himself, as he occasionally did, to be drawn out in conversation. Then his reminiscences of the surgeon to whom he was apprenticed, of his former teachers at the London and at Westminster Hospital (of whom Guthrie, author of *On Gunshot Wounds*, was perhaps the most famous), and of the examinations as conducted at the College in 1835, were worth hearing. If his memory and description are to be trusted the examination was over in one evening, and was entirely *viva voce*. He recalls a compliment from the deaf

Sir William Blizzard on the way he spoke out. But more interesting, and intensely vivid, were his word pictures of India and the campaigns in which he shared. The journey from Dinapur to Agra, some 450 miles, might now well be done in a night, but in 1843, by Dak gharry, drawn either by horse or bullock, it took three weeks; hence he was too late for the battle of Maharajpore, though he assisted with the wounded. His next campaign was on the banks of the Sutlej, and more than once I have heard the story of Aliwal, and of the bloody field of Sobraon, from the surgeon's point of view. Incidentally one learns from his writings that there were German missionaries at Gorruckpore in 1849, but selected by the Church Missionary Society on account of their cheapness. Hinton's experiences in the Mutiny included a thrilling march from Bowsee to Raneegunge with his regiment (32nd N.I.) for the purpose of being disarmed; the massacre of the officers on the march was only averted by the colonel receiving a letter of warning. So, too, there were tales of the second Sikh campaign of '48–'49, of the China war of 1858–60, and of the Bhootan campaign in 1864.

Of late years his birthdays were generally honoured by a visit from the Governor; Admiral Sir Day Bosanquet, our late Governor, had served as a midshipman outside Canton when Dr. Hinton was camped inside. Our present Governor, Sir Henry Galway, also usually visited him, and the late Chief Justice (Sir Samuel Way), when Lieutenant-Governor, always made a point of calling on him. Many distinguished visitors, ranging from Sir Ian Hamilton to Madame Melba, also from time to time were taken by me to see and chat with him, and then conversation would turn upon Sobraon and cannon-balls, Governors-General of India, and Commanders-in-Chief, Lord Gough and Sir Colin Campbell (Lord Clyde), Captain (afterwards Field-Marshal Sir) Patrick Grant, and Sir Hugh Rose (Lord Strathnairn), Sir William Mansfield (Lord Sandhurst), and Sir Harry Smith.

Dr. Hinton was frequently irascible, and often deficient in tact. As a consequence, it would seem, promotion was slow, and the medals and clasps for his campaigns were not always forthcoming. Nor does he seem to have taken advantage of the many openings for professional, for scientific, or for administrative work which in the case of other Indian surgeons have led to fame. Nor after his retirement did climate and leisure modify his temperament; the result was too evident: he made no friends. Still he was perfectly happy, even if rather egotistic. He was of a restless disposition, frequently changing his residence, and residing mostly in very second-rate hotels in town or country. When 90 years old he felt impelled to visit Africa with a vague idea that he might be of service during the Boer campaign. Up to the time of his accident he considered he had failed in his duty towards himself if for any reason he had not taken his daily walk of six or eight miles.

The remains were privately cremated at Adelaide on May 15th, and the ashes were buried next day at the North Road Cemetery in the grave of his wife, who had predeceased him by some thirty years. Simple in his habits and unostentatious in manner, he stipulated that his death should not be announced in the papers till after the cremation, for he had an aversion to the pomp of a military funeral or the attendance of the Corps of Veterans, to which he had been appointed surgeon on the occasion of his centenary.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following candidates have satisfied the examiners at the examinations indicated:

D.P.H.—*Part I:* Isobel Mitchell. *Part II:* Elizabeth F. Butler, A. K. Soutar.

FIRST M.B.—*Human Anatomy and Human Physiology:* H. G. Burford, F. B. Dutton, R. Gainsborough, T. Patterson, W. V. Robinson, H. W. Toms, B. Tordoff.

SECOND M.B.—*Materia Medica and Pharmacology:* C. W. W. Armstrong, I. H. Beattie, E. A. Crook, W. Gover, R. M. Humphreys, R. T. F. D. Roberts, J. J. Savage, G. K. Stone. *Pathology:* C. W. W. Armstrong, G. K. Bowes, W. Burridge, G. R. Cowie, W. Gover, W. F. Harvey, R. B. Hervey-Wyatt, R. M. Humphreys, R. W. Lush, K. A. I. Mackenzie, R. T. F. D. Roberts, G. H. Rossdale. *Forensic Medicine and Public Health:* F. L. Apperly, I. H. Beattie, J. N. L. Blamey, G. K. Bowes, W. Burridge, J. M. H. Campbell, L. M. Davies, W. S. Dawson, G. I. Evans, T. E. Micklem, G. Perkins, N. A. Sprott, S. C. Varley. *Medicine, Surgery, and Midwifery:* J. N. L. Blamey, J. M. H. Campbell, W. S. Dawson, T. E. Micklem, G. Perkins, N. A. Sprott.

M.S.—A. L. Pearce-Gould.

UNIVERSITY OF ST. ANDREWS.

THE annual graduation ceremony took place on July 6th, when Principal Herkless, Vice-Chancellor, presided. The following were among the degrees conferred:

M.D.—Captain J. Taylor, R.A.M.C.

M.B., CH.B.—Mary M. G. Ferguson, N. B. B. Fleming, Elsie L. Kyle, M. M'Gillivray, D. Roger, A. G. Stevenson.

HON. LL.D.—Dr. James Musgrove, Bute Professor of Anatomy in the University.

UNIVERSITY OF ABERDEEN.

THE summer graduation took place on July 8th. The Principal, Sir George Adam Smith, presided at the capping ceremony. The following were among the degrees conferred:

M.D.—J. Watt (highest honours for thesis), G. Byres (old regulations), Major A. W. O. Wright, I.M.S.

M.B., CH.B.—†**W. Corner, †*A. C. MacDonald, R. J. Clark, A. H. Craig, G. S. Davidson, G. Ewen, *A. Fowler, D. M. M. Fraser, *A. Johnston, G. J. Key, D. Lyon, G. S. Mather, J. A. Nicholson, A. K. Robb, *D. S. Scott, R. J. Smith, G. Thomson, W. D. Whamond.

* Passed Fourth Professional Examination with "distinction."
** Passed Fourth Professional Examination with "much distinction."
† Second class honours.

The John Murray medal and scholarship, awarded to the most distinguished graduate (M.B.) of 1916, has been bestowed upon Dr. Andrew G. Reid, who also received the Lyon prize.

THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ON Thursday, July 6th, the election was held of four Fellows to fill the vacancies occasioned by the retirement in rotation of Sir A. Pearce Gould, K.C.V.O., Mr. W. Haslam, and Sir W. Arbuthnot Lane, and by the death of Mr. Stanley Boyd. Mr. Haslam was re-elected, and Mr. T. H. Openshaw, C.M.G., Mr. Raymond Johnson, and Mr. Vincent Warren Low, C.B., were elected. Mr. Warren Low being fourth on the poll was declared substitute member for the late Mr. Stanley Boyd until July, 1917. The number of Fellows voting was 660, of whom 654 voted by ballot papers, but only 6 in person. Seven ballot papers were received too late.

	Votes.	Plumpers.
Mr. W. F. HASLAM	353	... 24
Mr. RAYMOND JOHNSON	315	... 23
Mr. THOMAS HORROCKS OPENSHAW, C.M.G.	282	... 33
Mr. VINCENT WARREN LOW	217	... 39
Mr. Francis J. Steward	208	... 55
Mr. Herbert Stringfellow Pendlebury ...	177	... 21
Mr. John Murray	160	... 6

Medical News.

THE annual general meeting of the Medico-Psychological Association of Great Britain and Ireland will be held on July 27th at 11, Chandos Street, Cavendish Square, W., at 2.45 p.m., when papers will be read by Sir George Savage on mental disabilities for war service, and by Captain Colin McDowall, R.A.M.C., on functional gastric disturbance in the soldier.

MAJOR R. TAIT MACKENZIE, R.A.M.C., professor of physical education, University of Pennsylvania, will read a paper on the treatment of convalescent soldiers by physical means, at a meeting of the Section of Surgery of the Royal Society of Medicine, on Friday next at 5 p.m. It will be illustrated by lantern slides of cases under treatment.

AMONG the pensions granted during the year ended March 31st, 1916, and payable under the provisions of Section 9 (1) of the Civil List Act, 1910, are £30 to Miss F. L. Bryant, in consideration of the surgical work of her father, the late Mr. Thomas Bryant, F.R.C.S., and of her inadequate means of support; and £50 to Dr. George Cunningham, in recognition of his services to the study of dentistry and of his straitened circumstances.

WE are informed that a Federation of Medical Women's Associations has been formed. It will be managed by an elected representative council. The organizations at present represented are: The North-Eastern, the Northern, the Midland, the Irish, the Scottish, and the Registered Medical Women's Associations. Inquiries may be addressed to the Secretary, Medical Women's Federation, 122, Harley Street, London, W.

THE S. Weir Mitchell Memorial Dispensary of the Philadelphia Orthopaedic Hospital and Infirmary for Nervous Diseases was formally dedicated on June 1st. An address in memory of Dr. Mitchell was delivered by Professor W. W. Keen. The building cost about £8,000.

AT a meeting of the Paris Academy of Medicine on March 28th, 1916, Professor Gaucher read a communication on syphilis in war time (abstracted in the EPITOME, June 10th, par. 78) which led to the appointment of a committee to study the whole question. The report of that committee—consisting of Drs. Balzer, Landouzy, Marie, Pinard, and Vaillard, with Dr. Gaucher as reporter—was presented to the Academy on June 6th. The recommendations are that there should be daily supervision and inspection of women in licensed brothels (*maisons de tolérance*); that other registered prostitutes should be inspected twice a week; that soldiers should be inspected every fortnight; and that men on leave should be inspected before they go home and on their return. Solicitation in the streets should be absolutely forbidden, and the police order relative to the supervision of furnished apartments, places licensed for the sale of drink, and every house open to the public should be rigorously enforced. Women not belonging to the district should be forbidden to reside within army zones. The natives of Africa and Asia brought in large numbers to work in war factories should be inspected on their departure from their own country and on arrival in France. Special hospitals at which persons suffering from venereal diseases, soldiers and civilians, men and women, could receive advice and receive out-patient treatment should be created; the patients, it is said, should be treated by "the most rapid, most active, and most certain methods." It is further suggested that courses should be established in the special clinics of medical faculties for the instruction of army doctors appointed to the charge of services of venereal disease, and that the lectures and demonstrations already given to soldiers by medical officers on the danger of such affections and the means of avoiding them should be multiplied. The majority of the committee were in favour of extending the system of licensed houses in garrison towns as well as in the fighting zone. Dr. Gaucher dissociates himself from that opinion, holding that it would be better to appeal to the moral sense of the men, and to insist on the expediency of continence as a measure of precaution. The recommendations as to women in war zones and as to the treatment of syphilis were referred to the committee for further study.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish office of the British Medical Association is 16, South Frederick Street, Dublin.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

DR. GEORGE PERNET asks for particulars of cases of mycosis fungoides treated by salvarsan. He states that Brault of Algiers has recorded a case unsuccessfully treated by salvarsan and hectine, and that in a case of mycosis fungoides *à tumeurs d'emblée* observed by himself salvarsan did no good; it may, he thinks, do harm.

LETTERS, NOTES, ETC.

M.O.H., who, while driving his car on duty, has been accused of being a "joy rider," writes to suggest that medical men should have some distinguishing mark on their cars to show that they are being used for professional purposes.

WOMEN STUDENTS AT THE LONDON HOSPITALS.

PROFESSOR W. D. HALLIBURTON (Dean of Medical Science Faculty, King's College, London) writes: Sir John Broadbent's letter in your issue of July 8th demands a word of explanation from me. I only mentioned St. George's Hospital as having admitted women students to its wards because that hospital was the only one of the four hospitals with which we at King's College are associated that had taken this step up to the date of my letter. I was dealing with the matter solely from the point of view of providing clinical instruction for women students who take their preliminary and intermediate work with us. I was quite aware that St. Mary's Hospital had thrown open its doors to women students, and I understood from a letter which Sir John Broadbent wrote to me about a month ago that his agreement with the London School of Medicine for Women precluded him from taking women medical students from any other source. From the King's College standpoint, therefore, St. Mary's Hospital was of no use to us, and that is the simple reason why I omitted to mention their recent action.

*** Charing Cross Hospital may now be added to the hospitals in London which have decided to admit women students. They will be admitted on the same terms as men, and can enter either for the full course or the final studies only. This decision, which is of temporary application, follows on the action of the Medical Science Faculty of King's College, with which Charing Cross Hospital is in relation.

HOW MEDICAL WRITINGS MAY BE GIVEN A MARKED DEVELOPMENT.

DR. WILLIAM BRAMWELL (Liverpool) writes: With regard to those "eight rather bad blunders in English" which it appears are to be found in my letter, I would like to say to Dr. Mercier what Ulysses said to Eurymachus:

Ἀλλὰ μάλ' ὑβρίζεις, καί τοι νόος ἐστὶν ἀπηνής.

Dr. Mercier knows perfectly well that neither Dr. Lipetz nor I mean to advocate the word "marked" as the only adjective of intensity. We intended only to show that Dr. Mercier has made an unjust charge against medical writers, and that his statements as to the overuse and misuse of the word "marked" are very much exaggerated, in proof of which Dr. Mercier fails to show in reply to the challenge of Dr. Lipetz where such word is used as equivalent "to slight or scanty." I am, however, glad Dr. Mercier admits that I am more genteel than he in my repudiation of the word "sloppy." It is a confession on his part that, although he may consider the word neither vulgar nor meaningless, he at any rate regards it as not genteel, and hence he to some extent substantiates the justice of my remarks. But with regard to this word it is a strange inconsistency that Dr. Mercier in seeking to limit the use of the word "marked" to its most primitive meaning, an intention which he plainly shows in his first letter, should attempt to stretch the application of the word "sloppy" to an extent which borders on the ludicrous. As a further instance of Dr. Mercier's inconsistency I would like to point out that the words "bally" and "blooming" and "others beginning with 'b'" and the phrase "has me on the hip" are not expressions which should have been allowed to appear in the letters of one who has undertaken to teach the medical profession how to write correctly. Dr. Mercier could have expressed his meaning much more forcibly by a choice of words which one is accustomed to meet with in good English. He could have made up sentences which the profession looking upon as examples of good composition could have profitably studied and copied from Dr. Mercier as a teacher. As it is, he has already an imitator in one of your correspondents, who spoils an otherwise well-worded letter by very unnecessarily introducing the word "damn," which, coming where it does, jars on sensitive ears like a false note in music. But, in my opinion, the most regrettable example which Dr. Mercier sets—regrettable because it is utterly at variance with correct composition—is that many of the similes or comparisons he uses are totally inapplicable to, and quite out of parallel with, the subject he is discussing. The use or misuse of the word "marked" in medical writings has no similarity whatever with the plebeian habit of "throwing orange peel into the street" or the mere accident of "spilling tea on the tablecloth," the kinds of carelessness involved being much too widely different to be capable of appropriate comparison, neither the wilful act nor the accident admitting the smallest defence; while, on the other hand, the word "marked" has its legitimate and justifiable use—a fact to which even Dr. Mercier now agrees, since he admits that "it is not incorrect," and that "it will serve." Other comparisons of even more glaring inaptitude he adopts in connexion with the word "develop." To say, for instance, that a man cannot "look a disease" or "appear it" are statements so absurd that they could be easily misunderstood as denials of the very existence of the physical appearances on which correct diagnosis in many cases must very largely depend; and ambiguity in similes is not permissible. Surely his last two letters are so unlike the writings of the Dr. Mercier we have been accustomed to know that we may well feel he has disguised himself in the mask of the "Abbot of Unreason."

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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An average line contains six words.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.